Processed Q&A from: Uncategorized_questions.docx

1.

Question: The nature of science as a process includes:

Options:

A. key concepts of science

B. scientific method

C. scientific theories

D. definitions and knowledge statement of science

Answer: scientific method

2.

Question: Which of the following is not the principle of curriculum construction ?

Options:

A. Principle of need

B. Principle of teacher centredness

C. Principle of utility

D. Principle of flexibility

Answer: Principle of teacher centredness

3.

Question: Which of the following characteristics is not related to team teaching?

Options:

A. Two or more teachers can teach one class together.

B. It is a child centred method of teaching.

C. In this class instruction is completely pre arranged.

D. It is based on collective responsibility.

Answer: In this class instruction is completely pre arranged.

4.

Question: Which of the following factors should be considered while deciding the size of a science laboratory ?

Options:

A. Type of equipment

B. Maximum number of students working at a time

C. Cost of equipment

D. Capacity of store room

Answer: Maximum number of students working at a time

5.

Question: Which type of evaluation is suitable to findout the specific weaknesses of students' learning?

Options:

A. Formative

B. Summative

C. Diagnostic

D. Remedial

Answer: Diagnostic

6.

Question: Which one of the following play an important role in establishing correlation of science with other subjects?

Options:

A. Text book

B. Teacher

C. Curriculum

D. All of these

Answer: All of these

7.

Question: The word 'curriculum' originated from

Options:

A. French language

B. English language

C. Latin language

D. German language

Answer: Latin language

8.

Question: Which of the following steps is not related to the project method?

Options:

A. Formulation of hypotheses

B. Planning the project

C. Execution of the project

D. Evaluation of the project

Answer: Formulation of hypotheses

9.

Question: The activity conducted out of the classroom, where pupils observe, experiment, explore and interpret the natural phenomena is called :

Options:

A. Science club

B. Field trip

C. Science laboratory

D. Science Museum

Answer: Field trip

10.

Question: In continuous and comprehensive evaluation 'Comprehensive Evaluation' means :

Options:

A. Evaluation of cognitive domain.

B. Evaluation of cognitive and affective domain.

C. Evaluation of cognitive, affective and psychomotor domain.

D. Evaluation of affective and psychomotor domain.

Answer: Evaluation of cognitive, affective and psychomotor domain.

11.

Question: Which of the following roles and responsibilities of the teacher were specifically emphasized in Programme of Action (POA) 1992 (NPE-1986)?
(A) To do teaching and guidance
(B) To do experimentation and research
(C) To participate in social and extension services.
Select the correct answer using the codes given below :

Options:

A. (A), (B) and (C)

B. (A) and (B)

C. (A) and (C)

D. Only (A)

Answer: (A), (B) and (C)

12.

Question: Which of the following is the terminal frame in linear programmed instruction?

Options:

A. Teaching frame

B. Practice frame

C. Testing frame

D. Introductory frame

Answer: Testing frame

13.

Question: Which of the following guiding principle related to National Curriculum Framework 2005 (NCF-2005) is not correct?

Options:

A. Connecting knowledge to life outside the school.

B. Ensuring that learning shifts away from rote method.

C. Making examination more complex and difficult.

D. Nurturing an overriding identity informed by caring concerns within the democratic polity of the country.

Answer: Making examination more complex and difficult.

14.

Question: Which one of the following teaching method is child centred method?

Options:

A. Demonstration method

B. Lecture method

C. Lecture-cum-demonstration method

D. Laboratory method

Answer: Laboratory method

15.

Question: Which one of the following characteristics does not reflect the personality attribute of a person having scientific attitude?

Options:

A. Open-mindedness

B. Spirit of curiosity

C. Faith in cause and effect relationship

D. Belief in superstitions

Answer: Belief in superstitions

16.

Question: The correct sequence of objectives of affective domain according to Bloom's Taxonomy is

Options:

A. Receiving → Responding → Valuing → Organisation → Characterisation

B. Receiving → Valuing → Responding → Organisation → Characterisation

C. Receiving → Organisation → Characterisation → Valuing → Responding

D. Valuing → Receiving → Organisation → Responding → Characterisation

Answer: Receiving → Responding → Valuing → Organisation → Characterisation

17.

Question: Which of the following psychologist promoted the inductive learning?

Options:

A. David Asubel

B. J.S. Bruner

C. B.F. Skinner

D. Harward Gardner

Answer: J.S. Bruner

18.

Question: The main objective of organisation of science club in school is

Options:

A. To develop the personality of teachers.

B. To develop management skill of principals.

C. To connect parents to school.

D. To develop creative and organisational capacity of students.

Answer: To develop creative and organisational capacity of students.

19.

Question: Merit of the objective type test is :

Options:

A. The test items are reliable and valid.

B. Teacher can assess the internal feeling of the student.

C. Framing of questions is easy.

D. The scoring process is time consuming.

Answer: The test items are reliable and valid.

20.

Question: Which of the following is not the non-projected teaching aid ?

Options:

A. Flannel Board

B. Chart

C. Motion picture

D. Model

Answer: Motion picture

21.

Question: Chromosomes are made up of:

Options:

A. R.N.A. + D.N.A.

B. R.N.A. + Lipids

C. D.N.A. + Sugar

D. D.N.A. + Proteins

Answer: D.N.A. + Proteins

22.

Question: Sucrose is a disaccharide. One molecule of sucrose on hydrolysis gives:

Options:

A. 2 molecules of glucose

B. 1 molecule of glucose + 1 molecule of galactose

C. 1 molecule of glucose + 1 molecule of fructose

D. 2 molecules of fructose

Answer: 1 molecule of glucose + 1 molecule of fructose

23.

Question: Photosynthesis is affected by following factors:

Options:

A. CO_2 + tenmperature + light

B. CO_2 + light + N_2

C. Water + temperature + N_2

D. O_2 + water + N_2

Answer: CO_2 + tenmperature + light

24.

Question: Which are the end products of Aerobic respiration ?

Options:

A. $CO_2 + H_2O$ + energy

B. CO_2 + energy

C. Sugar + energy + H_2O

D. $O_2 + CO_2 + H_2O$

Answer: $CO_2 + H_2O$ + energy

25.

Question: The hormone which occurs naturally in plant tissues and is commonly known as stress hormone is :

Options:

A. Auxin

B. Cytokinin

C. Gibberelin

D. Abscissic Acid

Answer: Abscissic Acid

26.

Question: The organisation which publishes the 'Red Data Book' of species is :

Options:

A. ICFRE

B. IUCN

C. UNEP

D. WWF

Answer: IUCN

27.

Question: In animals epithelial tissues are formed from:

Options:

A. Ectoderm

B. Endoderm

C. Mesoderm

D. All of these

Answer: All of these

28.

Question: Which of the following hormone is produced only from adrenal cortex ?

Options:

A. Testosterone

B. Aldosterone

C. Adrenaline

D. Progesterone

Answer: Aldosterone

29.

Question: Arrange the following events in kidney during urine formation, in the correct order:
1. Glomerular filtration
2. Secretion
3. Reabsorption

Options:

A. 1,2,3

B. 1,3,2

C. 2, 3, 1

D. 3, 1,2

Answer: 1,3,2

30.

Question: Locomotion by peristaltic movement is found in

Options:

A. Tortoise

B. Earthworm

C. Crab

D. Cockroach

Answer: Earthworm

31.

Question: Which among the following chemical is used to induce polyploidy in plants ?

Options:

A. PEG (Polyethylene Glycol)

B. Sodium algenate

C. Auxin

D. Colchicine

Answer: Colchicine

32.

Question: The first human hormone produced by recombinant DNA technology is

Options:

A. Insulin

B. Estrogen

C. Thyroxine

D. Progesterone

Answer: Insulin

33.

Question: True waxes are

Options:

A. Proteins

B. Carbohydrates

C. Alkanes

D. Lipids

Answer: Lipids

34.

Question: The shape of XeF_6 molecule is :

Options:

A. Hexagonal

B. Trigonal bipyramidal

C. Regular octahedral

D. Distorted octahedral

Answer: Distorted octahedral

35.

Question: Among the following ions which one has the highest magnetic momentum value?

Options:

A. $[Cr(H2O)6]3+$

B. $[Fe(H2O)6]2+$

C. $[Zn(H2O)6]2+$

D. $[Fe(CN)6]4-$

Answer: $[Fe(H2O)6]2+$

36.

Question: The symbol for the super heavy element with atomic number 105 is :

Options:

A. Uno

B. Unh

C. Unb

D. Unp

Answer: Unp

37.

Question: The element used in cell walls, bones and some shells is :

Options:

A. Mg

B. Ca

C. Fe

D. Cu

Answer: Ca

38.

Question: Hydrolysis of 2-bromo-3-methylbutane gives following major product :

Options:

A. 2-methylbutan – 2 – ol

B. 3-methylbutan - 2- ol

C. 2-methylbutan - 1 - ol

D. 3-methylbutan - 1 - ol

Answer: 2-methylbutan – 2 – ol

39.

Question: Chromophore showing both $\pi\rightarrow\pi^*$ and $n\rightarrow\pi^*$ transition is :

Options:

A. Nitrile

B. Ethylenes

C. Acetylenes

D. Conjugated-dienes

Answer: Nitrile

40.

Question: If 5.85 gm of NaCl is dissolved in 90 gm of water, the mole fraction of NaCl is:

Options:

A. 0.1

B. 0.01

C. 0.2

D. 0.0196

Answer: 0.0196

41.

Question: What weight of copper (At. mass = 63.5) deposits when 1 Faraday of electricity is passed through cupric salt solution:

Options:

A. 63.5 gm

B. 31.75 gm

C. 127 gm

D. 1.0 gm

Answer: 31.75 gm

42.

Question: If the earth suddenly shrinks to 1/64 of its original volume and mass remains unchanged, period of one rotation of earth will be (period of one rotation of earth before contraction is 24 hours)

Options:

A. 0.66 hour

B. 1.5 hour

C. 1/4 hour

D. 4 hours

Answer: 1.5 hour

43.

Question: A wire of uniform cross section of 1 mm² and density of material 9800 kg/m³ is stretched by 10 kg weight to produce transverse wave. The velocity of transverse wave in wire.

Options:

A. 100 m/sec

B. 10 m/sec

C. 1000 m/sec

D. 1 m/sec

Answer: 100 m/sec

44.

Question: An electrical oscillator having inductance L, resistance R and capacitance C will be oscillatory if -

Options:

A. $R < 2\sqrt{(L/C)}$

B. $R = 1/\sqrt{(LC)}$

C. $R > 2\sqrt{(L/C)}$

D. $R = 2\sqrt{(L/C)}$

Answer: $R < 2\sqrt{(L/C)}$

45.

Question: If Cm is most probable speed, Crms is root mean square speed and C is average speed then for a particular temperature Cm : C : Crms is -

Options:

A. 1: 1.128: 1.228

B. 1: 1.281: 1.282

C. 1: 1.821: 1.200

D. 1: 1.182: 1.246

Answer: 1: 1.128: 1.228

46.

Question: Two sources are called coherent if they produce waves -

Options:

A. of equal wavelength

B. of equal velocity

C. having same shape of wavefront

D. having a constant phase difference

Answer: having a constant phase difference

47.

Question: In an insulator, the forbidden energy gap between the valence band and conduction band is of the order of -

Options:

A. 0.67 eV

B. 1.14 eV

C. 1.43 eV

D. 5 eV

Answer: 5 eV

48.

Question: A piece of copper and another of germanium are cooled from room temperature to 80 K. The resistance of -

Options:

A. each of them increases

B. each of them decreases

C. copper increases and germanium decreases

D. copper decreases and germanium increases

Answer: copper decreases and germanium increases

49.

Question: Amplitude of oscillation of a forced oscillator at low frequency is 0.01×10^{-2} m. At frequency 100 Hz, it is 5 mm, Quality factor is -

Options:

A. 50

B. 500

C. 5

D. 5000

Answer: 50

50.

Question: Which of the following is not a step of scientific method ?

Options:

A. Observation

B. Classification

C. Curiosity

D. Measurement

Answer: Curiosity

51.

Question: "To learn science is to do science. There is no other way of learning science". Who said this ?

Options:

A. S. Chandrasekhar

B. U. R. Rao

C. D. S. Kothari

D. Jayant Narlikar

Answer: D. S. Kothari

52.

Question: Which of the following is not a co-curricular activity of Science ?

Options:

A. Science laboratory

B. Science fair

C. Science exhibition

D. Science club

Answer: Science laboratory

53.

Question: Objects of which group are inter-related ?

Options:

A. Stop watch, pendulum, test tube holder

B. Wire gauge, tripod stand, burner

C. Test tube stand, galvanometer, measuring cylinder

D. Boiling tube, delivery tube, hand lens

Answer: Wire gauge, tripod stand, burner

54.

Question: If working in a laboratory a container having inflammable fluid catches fire while heating, then your first job will be -

Options:

A. Shout for help

B. Pour water over the burning fluid

C. Run away from the place

D. Put off the gas burner

Answer: Put off the gas burner

55.

Question: 'School Science' a quarterly journal is published by -

Options:

A. National Council of Educational Research and Training

B. National Council of Teacher Education

C. Central Board of Secondary Education

D. Centre for Science and Environment

Answer: National Council of Educational Research and Training

56.

Question: The fixed answer type question, out of the following is -

Options:

A. What is an insulator ?

B. Sunlight is essential for the growth of plants. Is this statement true ?

C. What is the difference between Copper and Iron.

D. Give an example of strong acid.

Answer: Sunlight is essential for the growth of plants. Is this statement true ?

57.

Question: Some steps of question paper setting are (a) preparation of blue print (b) evaluation (c) weightage to objectives (d) making questions (e) preparing answer key. The correct order of these steps is -

Options:

A. (c), (a), (d), (e), (b)

B. (c), (d), (e), (a), (b)

C. (d), (b), (c), (a), (c)

D. (c), (d), (e), (b), (a)

Answer: (c), (a), (d), (e), (b)

58.

Question: Which type of question will not develop critical thinking among students ?

Options:

A. Open ended question

B. Probing question

C. Closed questions

D. Divergent question

Answer: Closed questions

59.

Question: Which one of the following is not a criteria of a good test?

Options:

A. Reliability

B. Validity

C. Potentiality

D. Objectivity

Answer: Potentiality

60.

Question: Which of the following organelles are involved in protein transport?

Options:

A. Endoplasmic Reticulum + Golgi bodies

B. Golgi bodies + Mitochondria

C. Endoplasmic Reticulum + Mitochondria

D. Lysosomes + Golgi bodies + Nucleolus

Answer: Endoplasmic Reticulum + Golgi bodies

61.

Question: Which of the following fruit is not a drupe?

Options:

A. Cherry

B. Apple

C. Plum

D. Peach

Answer: Apple

62.

Question: The water potential of pure water is

Options:

A. 1

B. 0

C. Less than 0

D. More than 0 but less than 1

Answer: 0

63.

Question: Deficiency symptoms of potassium are first visible in

Options:

A. Roots

B. Stem

C. Leaves

D. Fruit

Answer: Leaves

64.

Question: Name the region from India that has been listed as biodiversity hotspot:

Options:

A. Thar desert

B. Western ghats

C. Eastern ghats

D. Gir forest

Answer: Western ghats

65.

Question: The common name of Drosophila melanogaster is

Options:

A. Round Worm

B. Fruit Fly

C. Sea Horse

D. Zebra Fish

Answer: Fruit Fly

66.

Question: In bacteria, which of the following is analogous to mitochondria ?

Options:

A. Nucleoid

B. Ribosomes

C. Cell Wall

D. Mesosomes

Answer: Mesosomes

67.

Question: Parietal placentation with false septum is a characteristic feature of family :

Options:

A. Malvaceae

B. Ranunculaceae

C. Brassicaceae

D. Apiaceae

Answer: Brassicaceae

68.

Question: Which one of the following pairs of diseases is caused by viruses ?

Options:

A. Typhoid, Tuberculosis

B. Ringworm, AIDS

C. Common cold, AIDS

D. Dysentary, common cold

Answer: Common cold, AIDS

69.

Question: An example of heterosporous pteridophyte is:

Options:

A. Marsilea

B. Rhynia

C. Lycopodium

D. Equisetum

Answer: Marsilea

70.

Question: A Gymnosperm, that grows naturally in the arid areas of Rajasthan state is

Options:

A. Cycas

B. Taxus

C. Ephedra

D. Abies

Answer: Ephedra

71.

Question: When the margins of sepals or petals do not overlap each other, in any direction, the condition is known as

Options:

A. Vexillary

B. Valvate

C. Twisted

D. Imbricate

Answer: Valvate

72.

Question: Stomata of CAM plants :

Options:

A. are always open

B. never open

C. open during the day and close at night

D. close during the day and open at night

Answer: close during the day and open at night

73.

Question: Which of the following is wrongly matched ?

Options:

A. Sorghum: Kranz Anatomy

B. PEP Carboxylase: Mesophyll cells

C. Blackman: Law of limiting factors

D. PS II: P 700

Answer: PS II: P 700

74.

Question: Two particles, each of mass 1kg, move with velocities 10 i m/s and 21 + 4j m/s respectively before

collision. If these particles sticks after the collision, then the final momentum of system in center of mass frame is

Options:

A. Zero

B. 12+4 kg-m/s

C. 8 +4 kg-m/s

D. 6 1 kg-m/s

Answer: Zero

75.

Question: The angular velocity of a body changes from o to $_2$ without applying any torque. The ratio of initial radius of gyration to the final radius of gyration of the body is

Options:

A. $\sqrt{}\sqrt{}$

B. $\sqrt{}\sqrt{}2$

C. 02:0

D. ω: ω

Answer: $\sqrt{}\sqrt{}$

76.

Question: Amplitude of a damped oscillator becomes half in 2s. The amplitude after 8s of start of oscillation will be

Options:

A. of initial amplitude

B. of initial amplitude

C. of initial amplitude

D. of initial amplitude

Answer: of initial amplitude

77.

Question: Quality factor of a damped oscillator is

Options:

A. directly proportional to damping factor

B. inversely proportional to damping factor

C. directly proportional to amplitude of oscillation

D. inversely proportional to amplitude of oscillation

Answer: inversely proportional to damping factor

78.

Question: A transverse wave described by y = (0.02 m) sin[x + 30t] propagates on a stretched string having a linear mass density of $1.2 \times 10\text{-}4$ kg/m. The tension in the string is

Options:

A. 0.059 N

B. 0.108 N

C. 0.177 N

D. 0.216 N

Answer: 0.108 N

79.

Question: The energy density of a progressive wave is given by (symbols have their usual meaning)

Options:

A. $\rho\omega\tau\alpha$

B. $\rho^2\omega\alpha$

C. p^2wa

D. $\rho\omega^{22}$

Answer: $\rho\omega^{22}$

80.

Question: The rms speed of oxygen molecule (02) at a certain temperature T (in K) is v. If the temperature is doubled and oxygen gas dissociates into atomic oxygen (O), the rms speed of atomic oxygen will be

Options:

A. 2v

B. v/2

C. $\sqrt{2}$v

D. v/$\sqrt{2}$

Answer: 2v

81.

Question: The mean free path of moving gas molecules is directly proportional to kth power of diameter of molecule. Here value of k is

Options:

A. -2

B. -1

C. +1

D. +2

Answer: -2

82.

Question: Two sources are called coherent if they produce waves

Options:

A. of equal wavelength

B. of equal velocity

C. having same shape of wavefront

D. having a constant phase difference

Answer: having a constant phase difference

83.

Question: Two coherent light beams of intensity I and 4 I produce interference pattern. The intensity at a point where the phase difference is zero, will be

Options:

A. 91

B. 51

C. 41

D. 1

Answer: 91

84.

Question: For a semiconductor, the fraction of current contributions due to electrons and holes are 3/4 and 1/4 respectively and their drift velocities are in ratio 5/2, then the ratio of electron and hole concentration is

Options:

A. 2:15

B. 5:6

C. 6:5

D. 15:2

Answer: 6:5

85.

Question: Isotope effect coefficient of most of super conductors lies between

Options:

A. 0.25 to 0.4

B. 0.45 to 0.5

C. 0.65 to 0.7

D. 0.9 to 0.95

Answer: 0.45 to 0.5

86.

Question: At low temperatures the lattice specific heat varies as

Options:

A. T3

B. 1/T3

C. T

D. 1/T

Answer: T3

87.

Question: The coloured discharge tube for advertisement mainly contains

Options:

A. Xenon

B. Helium

C. Neon

D. Argon

Answer: Neon

88.

Question: Which property of transition metals is responsible for complex formation ?

Options:

A. Large size of transition metal cation.

B. Shows several oxidation states.

C. Absence of vacant (n-1)d orbitals.

D. Due to stable +2 oxidation state.

Answer: Shows several oxidation states.

89.

Question: Consider the following radioactive decay of
I. 92U α 90 Th
II. 90Th - 88 Ra
In which case the group of parent and daughter elements remains unchanged.

Options:

A. In l

B. In II

C. In both I & II

D. None

Answer: In l

90.

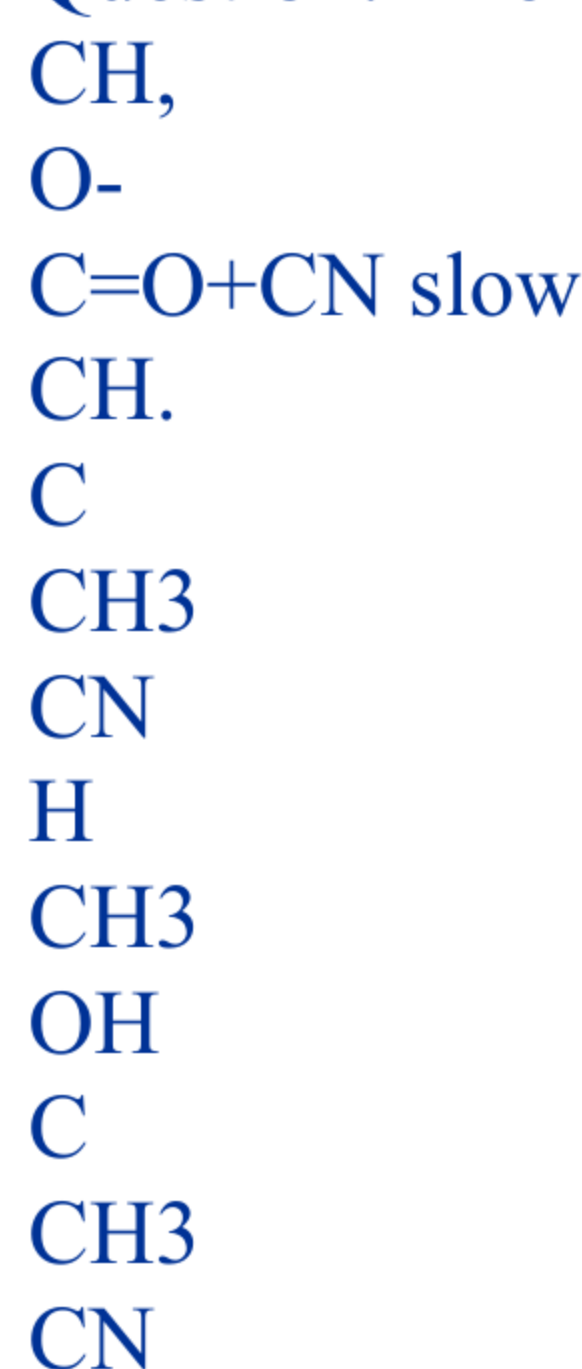Question: Which of the following metal ions are/is required for clotting of blood ?

Options:

A. Cu2+

B. Ca2+

C. Cu2+ and Ca2+

D. Zn2+

Answer: Ca2+

91.

Question: The reaction
CH,
O-
C=O+CN slow
CH.
C
CH3
CN
H
CH3
OH
C
CH3
CN
Is an example of

Options:

A. Electrophilic addition

B. Electrophilic substitution

C. Nucleophilic addition

D. Nucleophilic substitution

Answer: Nucleophilic addition

92.

Question: Correct order of negative inductive effect is

Options:

A. $F > NO_2 > Cl > Br > I > OCH3 > CH5$

B. $NO_2 > F > Cl > Br > I > OCH3 > CH5$

C. $OCH3 > F > Cl > Br > I > CH5 > NO2$

D. $NO_2 > I > Br > Cl > F > CH_3 > OCH3$

Answer: $NO_2 > F > Cl > Br > I > OCH3 > CH5$

93.

Question: A for the compound is

Options:

A. 313 nm

B. 413 nm

C. 213 nm

D. 113 nm

Answer: 213 nm

94.

Question: The number of fundamental modes of vibration in H_2O molecule are

Options:

A. 3

B. 6

C. 5

D. 0

Answer: 3

95.

Question: Kinetics of a reaction among A, B and C is first order in A, half order in B and inverse first order in C. On quadrupling the concentration of each of A, B and C, the rate of the reaction would

Options:

A. be quadrupled

B. be doubled

C. remain unchanged

D. be tripled

Answer: be doubled

96.

Question: 75% of a reaction of the first order was completed in 32 minutes. What is the time for its half completion?

Options:

A. 4 minutes

B. 8 minutes

C. 16 minutes

D. 32 minutes

Answer: 16 minutes

97.

Question: A solution of sugar was isotonic with another solution of CsCl. Both had same volume and same temperature. If sugar solution contained 0.2 mol of

sugar, estimate the number of moles of CsCl in other solution.

Options:

A. 0.1 mole

B. 0.2 mole

C. 0.05 mole

D. 0.004 mole

Answer: 0.1 mole

98.

Question: When a copper rod is put into a solution of silver nitrate, the colour of solution changes to blue because of

Options:

A. reduction of copper

B. oxidation of silver

C. oxidation of copper

D. formation of a soluble complex

Answer: oxidation of copper

99.

Question: At 25 °C, the standard cell potential of the following electrochemical cell is 0.59 V.
$A(s) + 22+ \rightarrow A2+ + Z(s)$
Calculate the equilibrium constant of the cell reaction.

Options:

A. 1/0.59

B. 0.59

C. 1×1020

D. 1 x 100.59

Answer: 1×1020

100.

Question: Which one of the following statements is correct?

Options:

A. Cells of all living organisms have a well organised nucleus.

B. Both, animal and plant cells have a well defined cell wall.

C. Prokaryotes lack membrane bound organelles.

D. New cells are formed de novo from abiotic material.

Answer: Prokaryotes lack membrane bound organelles.

101.

Question: Which one is the correct sequence of a cell cycle ?

Options:

A. $G_1 \rightarrow S \rightarrow G_2 \rightarrow M$

B. $G_2 \rightarrow M \rightarrow G_1 \rightarrow S$

C. $S \rightarrow G_2 \rightarrow M \rightarrow G_1$

D. $G_1 \rightarrow G_2 \rightarrow S \rightarrow M$

Answer: $G_1 \rightarrow S \rightarrow G_2 \rightarrow M$

102.

Question: The phosphate group and sugar molecule of a nucleotide are linked by -

Options:

A. Hydrogen bond

B. Phosphodiester bond

C. Monovalent bond

D. Peptide bond

Answer: Phosphodiester bond

103.

Question: Transverse section of a plant material shows the following anatomical characters -
(i) Hypodermis is sclerenchymatous
(ii) Vascular boundles are conjoint, closed and scattered in the ground tissue
(iii) Phloem parenchyma is absent ?
What will you identify it as -

Options:

A. Monocot stem

B. Dicot stem

C. Monocot root

D. Dicot root

Answer: Monocot stem

104.

Question: Match the lists I and II and select the correct answer using the codes given below the lists:
List I
(a) Brassicaceae
(b) Malvaceae
(c) Leguminosae

(d) Solanaceae

(e) Liliaceae

List II

(i) Gynoecium monocarpellary

(ii) Placenta swollen

(iii) Stamen tetradynamous

(iv) Flowers trimerous

(v) Anthers monothecous

Options:

A. (a) (iii); (b) (v); (c) (iv); (d) (ii); (e) (i)

B. (a) (i); (b) (ii); (c) (iii); (d) (iv); (e) (v)

C. (a) (v); (b) (iv); (c) (iii); (d) (ii); (e) (i)

D. (a) (iii); (b) (v); (c) (i); (d) (ii); (e) (iv)

Answer: (a) (iii); (b) (v); (c) (i); (d) (ii); (e) (iv)

105.

Question: Which one is not a function of transpiration ?

Options:

A. Excretion of minerals

B. Uptake of water

C. Uptake of minerals

D. Cooling of leaves

Answer: Excretion of minerals

106.

Question: Iron is a / an -

Options:

A. Unnecessary element

B. Toxic element

C. Macronutrient

D. Micronutrient

Answer: Micronutrient

107.

Question: The reaction centres of PS I and PS II are -

Options:

A. P680 and P700

B. P390 and P760

C. P400 and P700

D. P700 and P680

Answer: P700 and P680

108.

Question: The only 5-C organic acid formed as an intermediate in Krebs cycle is -

Options:

A. Citric acid

B. a-ketoglutaric acid

C. Malic acid

D. Oxaloacetic acid

Answer: a-ketoglutaric acid

109.

Question: The coenzyme of enzyme dehydrogenase is -

Options:

A. NADP

B. NAD

C. FAD

D. All the above

Answer: All the above

110.

Question: The living differentiated cells having lost the capacity to divide can regain the capacity of division under certain conditions. This phenomenon is termed as -

Options:

A. Differentiation

B. Dedifferentiation

C. Redifferentiation

D. Maturation

Answer: Dedifferentiation

111.

Question: Those plants which require a photoperiod exceeding a well defined critical photoperiod for flowering are called -

Options:

A. Day neutral plants

B. Long day plants

C. Short day plants

D. Intermediate plants

Answer: Long day plants

112.

Question: Match the lists I and II and select the correct answer using the codes given below the lists:

List I
(a) Electrostatic precipitator
(b) C.F.Cs
(c) Sanitary landfills
(d) Eutrophication

List II
(i) Ozone depletion
(ii) Municipal solid wastes
(iii) Ageing of lakes
(iv) Particulate matter

Options:

A. (a) (iv): (b) (iii); (c) (ii); (d) (i)

B. (a) (i); (b) (ii); (c) (iii); (d) (iv)

C. (a) (iv); (b) (i); (c) (ii); (d) (iii)

D. (a) (iii); (b) (iv); (c) (ii); (d) (i)

Answer: (a) (iv); (b) (i); (c) (ii); (d) (iii)

113.

Question: In lichens the function of mycobiont is -

Options:

A. Absorption of mineral nutrients

B. To provide shelter

C. Absorption of water

D. All the above

Answer: All the above

114.

Question: Which one of the following, has maximum contribution of greenhouse gases towards global warming ?

Options:

A. CH4

B. CO2

C. CFCs

D. N2O

Answer: CO2

115.

Question: Cardiac muscle fibres are -

Options:

A. Striated, voluntary

B. Striated, involuntary

C. Non striated, voluntary

D. Non striated, involuntary

Answer: Striated, involuntary

116.

Question: Antibodies against germs in our body are formed in -

Options:

A. Liver by RBC

B. Thymus by Lymphocytes

C. Blood by platelets

D. Blood by eosinophils

Answer: Thymus by Lymphocytes

117.

Question: Which hormones are secreted by anterior lobe of pituitary ?

Options:

A. TSH, ADH, Prolactin

B. LH, FSH, Growth hormone

C. ACTH, TSH, Oxytocin

D. STH, GH, Antidiuretic hormone

Answer: LH, FSH, Growth hormone

118.

Question: The venous system of Frog differs from that of a mammals in the presence of which of the followings ?

Options:

A. Renal Portal system

B. Hepatic Portal system

C. Hepatic vein

D. Superior vena cavac

Answer: Renal Portal system

119.

Question: The region of human eye from where optic nerve passes out of the retina is called -

Options:

A. Yellow spot

B. Optic chiasma

C. Fovea

D. Blind spot

Answer: Blind spot

120.

Question: A toxic substance hemozoin responsible for the chill and recurring high fever, in a man suffering from malaria, is released by -

Options:

A. Sporozoites

B. Rupture of RBC

C. Female Anopheles

D. Cause not known

Answer: Rupture of RBC

121.

Question: Mouthparts of cockroach are -

Options:

A. Biting and chewing type

B. Piercing and sucking type

C. Siphoning type

D. Sponging type

Answer: Biting and chewing type

122.

Question: The theory of Natural selection states that -

Options:

A. Heritable variations arise due to change in gene pool.

B. Environment has a role in evoluation.

C. Natural selection acts on favourable and useful variations which appear among individuals.

D. Acquired characters are inherited.

Answer: Natural selection acts on favourable and useful variations which appear among individuals.

123.

Question: Allopatrie speciation is due to -

Options:

A. Mutation

B. Geographical separation of populations

C. Migration of members of one species to other population

D. Hybridization between closely related species

Answer: Geographical separation of populations

124.

Question: In Drosophila (fruitfly) red eye character is dominant over white cye character, when a homozygous red eyed individual is crossed with homozygous white eyed individual and F_1 generation are intercrossed, 12 (twelve) individuals are produced. White eyed individuals of these will be -

Options:

A. three

B. six

C. nine

D. twelve

Answer: three

125.

Question: Which of the following is a sex linked desease ?

Options:

A. Nightblindness

B. Glaucoma

C. Eczema

D. Haemophilia

Answer: Haemophilia

126.

Question: What are the biological tools of 'Recombinant DNA technology'?

Options:

A. Restriction enzymes

B. Cloning vectors

C. Competent host

D. All of the above

Answer: All of the above

127.

Question: A committee set up by Govt. of India to make decisions regarding the validity of GM (Genetically Modified) research and safety of introducing GM organisms for public service, is -

Options:

A. NBPGR (National Bureau of Plant Genetic Resources)

B. CBD (Convention on Biological Diversity)

C. CMS (Convention on Migratory species)

D. GEAC (Genetic Engineering Approval Committee)

Answer: GEAC (Genetic Engineering Approval Committee)

128.

Question: Animals exhibiting asymmetry, radial symmetry and bilateral symmetry respectively are -

Options:

A. Crab, sponge, starfish

B. Sponge, crab, starfish

C. Sponge, starfish, crab

D. Starfish, crab, sponge

Answer: Sponge, starfish, crab

129.

Question: Which group of Placenta is found in human being ?

Options:

A. Epitheliochorial - Diffuse

B. Endothaliochorial - Zonary

C. Haemoendothelial - Discoidal

D. Haemochorial - Metadiscoidal

Answer: Haemochorial - Metadiscoidal

130.

Question: The total number of orbitals associated with the principal quantum number $n = 4$ is:

Options:

A. 4

B. 8

C. 12

D. 16

Answer: 16

131.

Question: The pair of species having same bond order is :

Options:

A. N_2, Cl_2

B. O_2^{2+}, F_2

C. NO^+, CO

D. O_2, N_2

Answer: NO^+, CO

132.

Question: 11 gm carbon dioxide gas may be obtained by combustion of x mole of methane. The value of x is :

Options:

A. 0.11

B. 0.22

C. 0.25

D. 0.50

Answer: 0.25

133.

Question: The molar mass of an ideal gas can be calculated from the expression:

Options:

A. $M = dRT / PV$

B. $M = RT / Pd$

C. $M = Pd / RT$

D. $M = dRT / P$

Answer: $M = dRT / P$

134.

Question: The molecule / ion having T-shape is :

Options:

A. BF_3

B. NH_3

C. H_3O^+

D. ClF_3

Answer: ClF_3

135.

Question: Two wires are of same material and same length. Their radii are r and 2r respectively. The ratio of their specific resistances is

Options:

A. 1:2

B. 2:1

C. 1:1

D. 4:1

Answer: 1:1

136.

Question: A metallic rod when placed in strong magnetic field, aligns itself at right angles to the magnetic field. The nature of material is

Options:

A. Diamagnetic

B. Paramagnetic

C. Ferromagnetic

D. Can be ferromagnetic or paramagnetic

Answer: Diamagnetic

137.

Question: The self inductance of a long solenoid of length / is proportional to

Options:

A. l^2

B. l

C. $1/l$

D. $1/l^2$

Answer: l

138.

Question: When the current changes from +2A to -2A in 0.05 second, an emf of 8V is induced in the coil. The coefficient of self inductance of the coil is

Options:

A. 0.05 H

B. 0.1 H

C. 0.2 H

D. 0.8 H

Answer: 0.1 H

139.

Question: Fringe width observed in the Young's double slit experiment is ß. If the frequency of the source is doubled, the fringe width will become

Options:

A. 2β

B. β

C. β/2

D. 4β

Answer: β/2

140.

Question: A surface ejects electrons when illuminated with green light but electrons are not ejected with yellow light. The photo electrons will also be ejected on illuminating the surface with

Options:

A. Infrared rays

B. Ultraviolet rays

C. Red light

D. Orange light

Answer: Ultraviolet rays

141.

Question: A nucleus AX emits one α and two β particles. The resulting nucleus is

Options:

A. A-4 / Z-2 Y

B. A-6 / Z-4 Y

C. A-6 / Z X

D. A-4 / Z X

Answer: A-4 / Z X

142.

Question: Which of the following diode is reverse biased?

Options:

A. 4V -> <- 3V

B. 2V -> <- -2V

C. 0V -> <- 2V

D. 6V -> <- -1V

Answer: 0V -> <- 2V

143.

Question: The output of the logic circuit shown in figure will be
A
B

Options:

A. A·B

B. A + B

C. A̅·B̅

D. Always zero

Answer: A̅·B̅

144.

Question: If λv, λx and λm represents the wavelength of visible light, X-Rays and microwaves respectively then

Options:

A. $\lambda m > \lambda x > \lambda v$

B. $\lambda m > \lambda v > \lambda x$

C. $\lambda x > \lambda v > \lambda m$

D. $\lambda v > \lambda m > \lambda x$

Answer: $\lambda m > \lambda v > \lambda x$

145.

Question: Total number of orbitals in an energy level with n = 5 is

Options:

A. 9

B. 16

C. 36

D. 25

Answer: 25

146.

Question: Amount of urea, H_2NCONH_2, needed to form 200 ml of 2×10^{-3} M solution is

Options:

A. 0.12 g

B. 24 g

C. 0.024 g

D. 1×10^{-2} g

Answer: 0.024 g

147.

Question: The root mean square velocity of a gas is doubled when the temperature is

Options:

A. reduced to one fourth

B. reduced to half

C. increased two times

D. increased four times

Answer: increased four times

148.

Question: A solid has a structure in which atom 'A' is placed at corners of a cubic lattice, atom 'B' is placed at

edge centres and atom 'C' at the centre of the cube, the formula of the solid compound is

Options:

A. CA_2B

B. CA_2B_2

C. CAB_3

D. CAB

Answer: CAB_3

149.

Question: Match the geometry of following from List-I with List-II:
List-I
A. NH_3
B. C/F_3
C. SO_2
D. SF_4
List-II
1. See-Saw
2. Trigonal Pyramidal
3. T-shape
4. Bent

Options:

A. 1 2 3 4

B. 4 3 2 1

C. 3 1 4 2

D. 2 3 4 1

Answer: 2 3 4 1

150.

Question: The correct order of hybridization of central atom in the following molecules will be :
XeF_2, $XeOF_2$, BCl_3 and ICl_4^-

Options:

A. sp^3d, dsp^3, sp^2, sp^2

B. sp^3d, sp^3d^2, sp^2, sp^3

C. sp, sp^3d, sp^2, sp^2

D. sp^3d, sp^3d, sp^2, sp^3d^2

Answer: sp^3d, sp^3d, sp^2, sp^3d^2

151.

Question: $[Co(NH_3)_5SO_4]Br$ and $[Co(NH_3)_5 Br]SO_4$ show which type of isomerism?

Options:

A. Ionisation isomerism

B. Co-ordination isomerism

C. Linkage isomerism

D. Optical isomerism

Answer: Ionisation isomerism

152.

Question: If the wavelength of the light absorbed by $[Co(NH_3)_3(H_2O)]^{3+}$ complex be 500 nm, the color of this complex shall appear to be

Options:

A. Red

B. Blue

C. Purple

D. Yellow orange

Answer: Yellow orange

153.

Question: The correct order of first ionisation energy among the following is

Options:

A. $C > N > O > F$

B. $O > N > F > C$

C. $O > F > N > C$

D. $F > N > O > C$

Answer: $F > N > O > C$

154.

Question: The correct order of increasing size of the following species will be

Options:

A. $Na^+ < Al^- < F^- < Mg^{2+}$

B. $Mg^{2+} < Na^+ < F^- < Al^-$

C. $Na^+ < Al^- < Mg^{2+} < F^-$

D. $F^- < Na^+ < Mg^{2+} < Al^-$

Answer: $Mg^{2+} < Na^+ < F^- < Al^-$

155.

Question: The reaction $H_2(g) + CO_2(g) \rightleftharpoons CO(g) + H_2O(g)$ has initial concentration of $[H_2] = [CO_2] = 1$ mol/L and x mol/L of hydrogen is consumed at equilibrium, the correct expression for Kc is

Options:

A. $x^2 / (1-x)^2$

B. $x^2 / (1-x)^2$

C. $x^2 / (2-x)^2$

D. $x^2 / (2+x)^2$

Answer: $x^2 / (1-x)^2$

156.

Question: The ratio of concentrations of H^+ in two separate 1.0 M solution of acid HA_1 ($Ka = 9.8 \times 10^{-5}$) and 1.0 M solution of acid HA_2 ($Ka = 2 \times 10^{-6}$) is

Options:

A. 49:1

B. 7.0:1

C. 4.9:1

D. 1:49

Answer: 7.0:1

157.

Question: From the following information :
$O(g) + e^- \rightarrow O^-(g)$; - 141.4 kJ mol^{-1}
$O^-(g) + e^- \rightarrow O^{2-}(g)$; + 790.8 kJ mol^{-1}
Calculate the total energy change to produce $O^{2-}(g)$ from $O(g)$

Options:

A. +932.2 kJ mol^{-1}

B. -932.2 kJ mol^{-1}

C. +649.4 kJ mol^{-1}

D. -282.8 kJ mol^{-1}

Answer: +649.4 kJ mol^{-1}

158.

Question: For the reaction $N_2(g) + 3H_2(g) \rightarrow 2NH_3(g)$ carried out at constant temperature and pressure, the expression for ΔH(Enthalpy) and ΔU (Internal energy change) will be

Options:

A. $\Delta H = 0$

B. $\Delta H = \Delta U$

C. $\Delta H < \Delta U$

D. $\Delta H > \Delta U$

Answer: $\Delta H < \Delta U$

159.

Question: In the balanced chemical equation :
$2MnO_4^- + X + 6H^+ \rightarrow 2Mn^{2+} + 8H_2O + 10\ CO_2$.
X is

Options:

A. $5OH^-$

B. $10HCOOH$

C. $5C_2O_4^{2-}$

D. $5(COOH)_2$

Answer: $5(COOH)_2$

160.

Question: Difference in the oxidation numbers of chlorine in $HClO_4$ and $BrCl$ is

Options:

A. $+6$

B. $+8$

C. -6

D. $+5$

Answer: $+8$

161.

Question: The copper ore is

Options:

A. Magnetite

B. Malachite

C. Calamine

D. Siderite

Answer: Malachite

162.

Question: In relation to electrolytic refining of blister copper, the false statement is

Options:

A. Anode is of blister copper.

B. Cathode is of pure copper strip.

C. Acidified solution of copper sulphate is used as electrolytic solution

D. Anode reaction is $Cu^{2+} + 2e^- \rightarrow Cu(s)$

Answer: Anode reaction is $Cu^{2+} + 2e^- \rightarrow Cu(s)$

163.

Question: Nitrogen product produced by the reaction of sodium nitrite and ammonium chloride in aqueous solution is

Options:

A. Sodium nitrate

B. Nitrous oxide

C. Nitrogen gas

D. Sodium azide

Answer: Nitrogen gas

164.

Question: About PCl_5 molecule in gaseous phase the false statement is

Options:

A. It has trigonal bipyramidal structure.

B. Its all five P-Cl bonds are identical.

C. There are three equatorial and two axial P-Cl bonds.

D. Length of axial P-Cl bonds is longer than equatorial bonds.

Answer: Its all five P-Cl bonds are identical.

165.

Question: The percentage of carbon in an organic compound is 85.7 and the percentage of hydrogen is 14.3. The empirical formula of this compound is

Options:

A. CH

B. C_2H_3

C. CH_2

D. CH_4

Answer: CH_2

166.

Question: $CH_2 = CH_2 + HBr \rightarrow CH_3CH_2Br$, the type of reaction is

Options:

A. Electrophilic substitution reaction

B. Electrophilic addition reaction

C. Nucleophilic substitution reaction

D. Nucleophilic addition reaction

Answer: Electrophilic addition reaction

167.

Question: Name the alkene which on ozonolysis gives acetone

Options:

A. But-2-ene

B. But-1-ene

C. 2,3-dimethyl but-2-ene

D. Propene

Answer: 2,3-dimethyl but-2-ene

168.

Question: The monomers of glyptal are

Options:

A. Phenol and Formaldehyde

B. Styrene and 1, 3- Butadiene

C. Ethylene glycol and Phthalic acid

D. Ethylene glycol and terephthalic acid

Answer: Ethylene glycol and Phthalic acid

169.

Question: Which of the following compounds is not an opiate ?

Options:

A. Heroin

B. Morphine

C. Aspirin

D. Codeine

Answer: Aspirin

170.

Question: Which of the following is non-reducing sugar?

Options:

A. Fructose

B. Sucrose

C. Glucose

D. Lactose

Answer: Sucrose

171.

Question: 'Fog' is a colloid of

Options:

A. Liquid particles dispersed in gas

B. Gaseous particles dispersed in a liquid

C. Solid particles dispersed in liquid

D. Solid particles dispersed in gas

Answer: Liquid particles dispersed in gas

172.

Question: Which of the following gases forms carboxy haemoglobin?

Options:

A. CO

B. CO_2

C. O_3

D. O_2

Answer: CO

173.

Question: The major contributor to global warming is

Options:

A. CFCs

B. N_2O

C. CO_2

D. CH_4

Answer: CO_2

174.

Question: Stratospheric ozone protects the life on the earth by absorbing

Options:

A. UV radiation

B. X-Rays

C. Cathode Rays

D. Visible Radiation

Answer: UV radiation

175.

Question: In which among the following segmentation is observed ?

Options:

A. Platyhelminthes

B. Aschelminthes

C. Annelida

D. Coelenterata

Answer: Annelida

176.

Question: Which of the following group of animals belong to the same phylum ?

Options:

A. Plasmodium, Amoeba, Mosquito

B. Earthworm, Pinworm, Tape worm

C. Prawn, Scorpion, Locust

D. Sponge, Sea Anemone, Starfish

Answer: Prawn, Scorpion, Locust

177.

Question: The correct systematic position for a genus is:

Options:

A. Division, Class, Order, Family

B. Family, Class, Division, Order

C. Class, Family, Order, Division

D. Family, Order, Division, Class

Answer: Division, Class, Order, Family

178.

Question: The process of sperm production takes place in :

Options:

A. Epididymis

B. Vas deferens

C. Prostate glands

D. Seminiferous tubules

Answer: Seminiferous tubules

179.

Question: Which among the following is the major site for synthesis of lipid in cell ?

Options:

A. RER

B. SER

C. Symplast

D. Nucleus

Answer: SER

180.

Question: Which of the following is not used as a vector in recombinant DNA technology?

Options:

A. Plasmid

B. Phagemid

C. YAC

D. EcoR1

Answer: EcoR1

181.

Question: Which of the following process is involved in fixation of CO_2 from atmosphere?

Options:

A. Respiration

B. Photosynthesis

C. Deforestation

D. Lightening

Answer: Photosynthesis

182.

Question: Nissl granules are found in :

Options:

A. Nerve cell

B. Cartilage

C. Muscle

D. Bone

Answer: Nerve cell

183.

Question: Which of the following micro-organism is the source of main enzyme used for amplification of DNA during PCR?

Options:

A. Trichoderma reesei

B. Bacillus licheniformis

C. Streptococcus pyogenes

D. Thermus aquaticus

Answer: Thermus aquaticus

184.

Question: The five kingdom classification by R.H. Whittaker is based on:

Options:

A. Mode of nutrition

B. Mode of Reproduction

C. Cell structure

D. All of these

Answer: All of these

185.

Question: During protein synthesis, the energy for the peptide bond formation is derived from hydrolysis of

Options:

A. FAD

B. GTP

C. NADP

D. NAD

Answer: GTP

186.

Question: Which of the following is an example of a primary metabolite ?

Options:

A. Codeine

B. Anthocyanin

C. Carotenoid

D. Galactose

Answer: Galactose

187.

Question: In plants, Casparian strips present on the walls of endodermis are made up of:

Options:

A. Lignin

B. Xylan

C. Suberin

D. Cellulose

Answer: Suberin

188.

Question: Cleistogamous flowers are invariably

Options:

A. Autogamous

B. Geitonogamous

C. Chasmogamous

D. Xenogamous

Answer: Autogamous

189.

Question: An example of a plant in which after fertilization, the sepals wither and fall off is

Options:

A. Raspberry

B. Tomato

C. Brinjal

D. Bittergourd

Answer: Bittergourd

190.

Question: Out of the following, an example of a trace element, in plants, is

Options:

A. Potassium

B. Nitrogen

C. Manganese

D. Magnesium

Answer: Manganese

191.

Question: In which of the following metabolic cycles does not involve RUBISCO?

Options:

A. Calvin Cycle

B. Krebs Cycle

C. Photorespiration

D. Crassulacean Acid Metabolism

Answer: Krebs Cycle

192.

Question: The "Common Respiratory Pathway" is also known as:

Options:

A. Fermentation

B. Oxidative phosphorylation

C. Glycolysis

D. Citric acid cycle

Answer: Glycolysis

193.

Question: Given $F = at^1 + bt^2$, where F denotes force and t denotes time, the dimensions of a and b are respectively

Options:

A. LT-2, T-2

B. MLT-2, MT-2

C. MLT-¹, MLT-4

D. MLT-¹, MLT-2

Answer: MLT-¹, MLT-4

194.

Question: If the percentage error in the measurement of radius of a sphere is 2%. The maximum percentage error in measurement of its volume is

Options:

A. 0%

B. 2%

C. 6%

D. 8%

Answer: 6%

195.

Question: A projectile fired with initial velocity u at some angle & has a range R. If the initial velocity be doubled keeping the angle of projection same, then the range will be

Options:

A. R/2

B. R

C. 2R

D. 4R

Answer: 4R

196.

Question: The value of constant p, so that the vectors a = 31 - 4j + 2k and b = 21 - 3j + pk are mutually perpendicular, is

Options:

A. -4

B. 3

C. -3

D. -9

Answer: -9

197.

Question: A mass m is at rest initially. A constant force is applied to it. For a given displacement the velocity produced in it will be proportional to

Options:

A. $\sqrt{m}$

B. $1/\sqrt{m}$

C. m

D. 1/m

Answer: $1/\sqrt{m}$

198.

Question: Which of the following is a self adjusting force?

Options:

A. Static friction

B. Limiting friction

C. Dynamic friction

D. Rolling friction

Answer: Static friction

199.

Question: A body moves a distance of 10 m along a straight line under the action of a force of 5 N. If the work done is 25 J, the angle between the force and direction of motion of body is

Options:

A. 90°

B. 60°

C. 30°

D. 0°

Answer: 60°

200.

Question: Consider a uniform square plate of side a and mass m. The moment of inertia of this plate about an axis perpendicular to its plane and passing through one of its corner is

Options:

A. 2/3 ma²

B. ma²/12

C. ma²/6

D. 7/12 ma²

Answer: 2/3 ma²

201.

Question: Which of the following does not remain constant in free simple harmonic motion?

Options:

A. Amplitude

B. Time period

C. Velocity

D. Frequency

Answer: Velocity

202.

Question: Four particles having masses m, 2 m, 3 m and 4 m are placed at the four corners of a square of edge a as shown in the figure. The gravitational force acting on a particle of mass m placed at the centre of the square will be

Options:

A. $2\sqrt{2}\ Gm^2/a^2$

B. $\sqrt{2}\ Gm^2/a^2$

C. $4\sqrt{2}\ Gm^2/a^2$

D. $8\sqrt{2}\ Gm^2/a^2$

Answer: $4\sqrt{2}\ Gm^2/a^2$

203.

Question: Longitudinal strain can be produced

Options:

A. only in solids

B. only in liquids

C. only in gases

D. both in liquids and gases

Answer: only in solids

204.

Question: On dipping a capillary in water the mass of the water that rises in it is m. If another capillary of double the radius of first is dipped into the water the mass of water rised will be

Options:

A. m/2

B. m

C. 2m

D. 4m

Answer: 2m

205.

Question: Water is flowing through a horizontal tube having unequal area of cross section. At the most narrow place of the pipe

Options:

A. velocity of water is maximum and pressure minimum.

B. pressure maximum and velocity minimum.

C. both velocity and pressure will be minimum.

D. both velocity and pressure will be maximum.

Answer: velocity of water is maximum and pressure minimum.

206.

Question: A system absorbs 50 J of heat and does 11 J of work in a process. The system follows a different thermodynamic path between the same initial and final states and does 15 J work, the heat transferred in the process is

Options:

A. 39 J

B. 65 J

C. 54 J

D. 46 J

Answer: 54 J

207.

Question: A carnot engine operates between the temperatures 227 °C and 127 °C. If the work output of the engine is 500 J, then the amount of heat rejected to sink is

Options:

A. 2000 J

B. 2500 J

C. 1000 J

D. 1500 J

Answer: 2000 J

208.

Question: An object is cooled from 75 °C to 65 °C in 2 minutes at a room temperature of 30 °C. The time taken to cool the same object from 55 °C to 45 °C at the same room temperature is

Options:

A. 2 min

B. 3 min

C. 4 min

D. 5 min

Answer: 4 min

A. 3 µF

B. 6 µF

C. 13 µF

D. 16 µF

Answer: 3 µF

209.

Question: Doppler shift in frequency does not depend on the

Options:

A. speed of source

B. speed of observer

C. frequency of the wave emitted by the source

D. distance between the source and the observer

Answer: distance between the source and the observer

210.

Question: The focal length and magnification of a plane mirror are

Options:

A. f= ∞, m = 0

B. f= 0, m = 1

C. f= ∞, m = 1

D. f= 0, m = 0

Answer: f= ∞, m = 1

211.

Question: A charge q is enclosed by a Gaussian spherical surface of radius R. If the radius of spherical surface is doubled, then the electric flux through the surface will

Options:

A. be doubled

B. increase four times

C. be reduced to half

D. remain the same

Answer: remain the same

212.

Question: Two capacitors each of value 2 µF are connected in parallel and this combination is in series with a capacitor of 12 µF. The equivalent capacitance of the system is

Options:

213.

Question: If excess of $AgNO_3$ is added to a solution containing one mole of $CoC134NH3$, the number of mole(s) of AgCl precipitated will be

Options:

A. 0

B. 1

C. 2

D. 3

Answer: 1

214.

Question: [Co(NH3)5SO4] Br and [Co(NH3)5 Br] SO4 show which type of isomerism?

Options:

A. Ionisation isomerism

B. Co-ordination isomerism

C. Linkage isomerism

D. Optical isomerism

Answer: Ionisation isomerism

215.

Question: The increasing order of crystal field splitting strength of NH3, CN NO2 and OH ligands is:

Options:

A. NO2 < NH3 < OH® < CN

B. NH3 < OH® < CN® < NO

C. OH < Θ NH3 < NO2 <CN

D. OH® < NH3 < CN < NO2

Answer: OH < Θ NH3 < NO2 <CN

216.

Question: The correct order of first ionisation energy for C, N, O and Fis:

Options:

A. C > N > O > F

B. O > N > F > C

C. $O > F > N > C$

D. $F > N > O > C$

Answer: $F > N > O > C$

217.

Question: The pair of amphoteric oxides out of the following is:

Options:

A. CaO, C1207

B. CO2, SO2

C. H2O, Na2O

D. Al2O3, A5203

Answer: Al2O3, A5203

218.

Question: What is the pH of a $1 \times 10\text{-}8$ M solution of HCI ?

Options:

A. 8

B. 1

C. 6.9

D. 7

Answer: 6.9

219.

Question: For a reaction to occur spontaneously :

Options:

A. (AH-TAS) must be negative

B. (AH+TAS) must be 'negative

C. (AH) must be negative

D. (AS) must be negative.

Answer: (AH-TAS) must be negative

220.

Question: In the reaction: $3 Cl2 + 6 NaOH \rightarrow NaClO3 + 5 NaCl + 3 H2O$ the clement which loses as well as gains electron is :

Options:

A. Na

B. CI

C. 0

D. H

Answer: CI

221.

Question: Froth flotation process is used for the concentration of:

Options:

A. Oxide ores

B. Sulphide ores

C. Chloride ores

D. Amalgams

Answer: Sulphide ores

222.

Question: 'Water-gas' is :

Options:

A. $CO + H_2O$

B. $CO2 + H2$

C. $CO + N2$

D. $CO + H_2$

Answer: $CO + H_2$

223.

Question: Which of the following is a mineral of copper ?

Options:

A. Calamine

B. Cryolite

C. Hacmatite

D. Malachite

Answer: Malachite

224.

Question: IUPAC name of is:

Options:

A. 1 - Ethyl - 3, 3 dimethylcyclohexane

B. 1,1 Dimethyl 3 ethylbenzenc

C. 3 Ethyl - 1, 1 dimethylcyclohexane

D. 3 Ethyl 1, 1 dimethylhexane

Answer: 3 Ethyl - 1, 1 dimethylcyclohexane

225.

Question: Number of σ and π bonds in butenyne are:

Options:

A. 56, 3 π

B. 7 σ, 3 π

C. 8σ, 2 π

D. 66, 4 π

Answer: 7 σ, 3 π

226.

Question: Namc. the alkene which on ozonolysis gives acetone :

Options:

A. 2 Butene

B. 1 Butene

C. 2,3 Dimethyl 2- butene

D. Propene

Answer: 2,3 Dimethyl 2- butene

227.

Question: Which of the following groups directs the incoming electrophile at meta position in benzene ring ?

Options:

A. -C2H5

B. -NHCOCH3

C. -OCH3

D. -COR

Answer: -COR

228.

Question: Which hydrocarbon on warming with mercuric sulphate and dilute sulphuric acid forms carbonyl comopound ?

Options:

A. Alkane

B. Alkene

C. Alkyne

D. Benzene

Answer: Alkyne

229.

Question: The glyptal is a polymer of :

Options:

A. Phenol and formaldehyde

B. Styrene

C. Ethylenc glycol and phthalic acid

D. Ethylene glycol and terphthalic acid

Answer: Ethylenc glycol and phthalic acid

230.

Question: Polythene is an example of the following type of polymer :

Options:

A. Thermosetting polymer

B. Thermoplastic polymer

C. Fibre

D. Elastomer

Answer: Thermoplastic polymer

231.

Question: Norethindrone is an:

Options:

A. Antifertility drug

B. Enzyme

C. Antacid

D. Analgesic

Answer: Antifertility drug

232.

Question: The metal present in vitamin B12 is:

Options:

A. Zn

B. Fe

C. Mg

D. Co

Answer: Co

233.

Question: Which of the following is narrowspectrum antibiotic ?

Options:

A. Penicilline - G

B. Chloramphenicol

C. Ofloxacin

D. Vancomycin

Answer: Penicilline - G

234.

Question: The flocculating power of which ion is highest for Fe2O3.x H2O sol:

Options:

A. PO43-

B. Al3+

C. Na+

D. [Fe(CN)6]4-

Answer: [Fe(CN)6]4-

235.

Question: A non-ionic detergent is formed when steric acid reacts with:

Options:

A. Lauryl alcohol

B. Glycerol

C. Glyceryl oleate

D. Polyethylene glycol

Answer: Polyethylene glycol

236.

Question: An example of a colloid having gas as dispersed phase and solid as dispersion medium is :

Options:

A. Butter

B. Pumice stone

C. Dust

D. Froth

Answer: Pumice stone

237.

Question: Photochemical smog is also known as:

Options:

A. Classical smog

B. Oxidising smog

C. Reducing smog

D. Acidic smog

Answer: Oxidising smog

238.

Question: Two spheres of 1 kg and 5 kg are dropped simultaneously from the same height. The ball that will hit the ground will be (If air friction is negligible)

Options:

A. 1 kg

B. 5 kg

C. Both will reach simultaneously

D. Insufficient data

Answer: Both will reach simultaneously

239.

Question: At what angle with the horizontal should a player throw a ball so that it may go to a maximum distance ?

Options:

A. 30°

B. 45°

C. 60°

D. 75°

Answer: 45°

240.

Question: A mass of "m" kg is rotating by means of a string with angular speed of "n" rpm. If on keeping the radius constant and the tension in the string is doubled, the resultant angular speed is roughly.

Options:

A. n

B. 2n

C. √2n

D. n/2

Answer: √2n

241.

Question: A particle moves along X-axis from x=0 to x=5m under a variable force F=7-2x+3x² Newton. The workdone in this process is -

Options:

A. 70 J

B. 270 J

C. 35 J

D. 135 J

Answer: 135 J

242.

Question: If we go from equator to the poles, the value of "g" will -

Options:

A. decrease

B. increase

C. remain unaffected

D. become zero at poles

Answer: increase

243.

Question: A capillary tube dipped vertically in a liquid. The meniscus of liquid in the capillary is in level with the liquid outside. The angle of contact is -

Options:

A. Zero

B. 90°

C. Acute

D. Obtuse

Answer: 90°

244.

Question: In the figure below, the potential difference across the 2µF capacitor will be -

Options:

A. 200 V

B. 400 V

C. 600 V

D. 900 V

Answer: 600 V

245.

Question: The thickness of depletion layer in p-n junction diode may be increased by -

Options:

A. increasing the temperature of device

B. increasing the reverse bias

C. decreasing the temperature of device

D. decreasing the reverse bias

Answer: increasing the reverse bias

246.

Question: The figure below shows two semi circular current carrying loops of radii R_1 and R2. The magnitude and direction of the magnetic field at the common centre 'O' will be -

Options:

A. $\mu_0 I/4$ $(1/R_1 + 1/R2)$ Normal to plane directed upwords

B. $\mu_0 I/4$ $(1/R_1 - 1/R2)$ Normal to plane directed upwords

C. $\mu_0 I/4$ $(1/R_1 + 1/R2)$ Normal to plane directed downwords

D. $\mu_0 I/4$ $(1/R_1 - 1/R2)$ Normal to plane directed downwords

Answer: $\mu_0 I/4$ $(1/R_1 - 1/R_2)$ Normal to plane directed downwords

247.

Question: Which of the following pairs of quantities donot have same dimensional formula ?

Options:

A. Torque and work

B. Light year and wavelength

C. Pressure and elastic constant

D. Angular momentum and power

Answer: Angular momentum and power

248.

Question: An Athlete completes one round of a circular track of radius R in 40 seconds. What will be his displacement at the end of 2 min. 20 sec. ?

Options:

A. Zero

B. 2R

C. $2\pi\lambda$

D. $7\pi\lambda$

Answer: 2R

249.

Question: If A+ B = A-B and A, B are finite then -

Options:

A. A is parallel to B

B. A=B

C. A and B are mutually perpendicular

D. |A|=|B|

Answer: A and B are mutually perpendicular

250.

Question: The rate of change of angular momentum is equal to -

Options:

A. Force

B. Angular acceleration

C. Torque

D. Moment of Inertia

Answer: Torque

251.

Question: Two waves are given by y = a sin (a-kx) and 2 = a cos (or-kx). The phase difference between the two waves is

Options:

A. π/4

B. π/2

C. π

D. zero

Answer: π/2

252.

Question: Half life of radium is 1600 years, its average life is -

Options:

A. 6200 yrs.

B. 4800 yrs.

C. 2309 yrs.

D. 4217. yrs.

Answer: 2309 yrs.

253.

Question: Suppose A = BC, where A has the dimension L/M and C has the dimension L/T. Then B has dimensions.

Options:

A. T/M

B. L²/TM

C. TM/L²

D. L²T/M

Answer: T/M

254.

Question: A 5 kg object can move along the X-axis. It is subjected to a force in the positive X direction; a graph of F as a function of time 1 is shown below. Over the

time the force is applied the change in velocity of the object is -

Options:

A. 0.8 m/s

B. 1.6 m/s

C. 2.3 m/s

D. 4.0 m/s

Answer: 1.6 m/s

255.

Question: An object is dropped from an altitude of one radius above Earth's surface. If M is the mass of earth and R is its radius, the speed of object just before it hits earth is given by

Options:

A. GM

B. V R

C. GM

D. V2R

E. 2GM

F. V R

G. GM

H. V R2

Answer: GM / V R

256.

Question: Standing waves are produced by the super position of two sinusoidal waves, each of frequency 100 Hz. The distance from second node to fifth node is 60 cm. The wavelength of each of the two original wave is -

Options:

A. 50 cm

B. 30 cm

C. 40 cm

D. 20 cm

Answer: 40 cm

257.

Question: The rise in pitch of an approaching siren is an apperent increase in its -

Options:

A. Speed

B. Amplitude

C. Frequency

D. Wavelength

Answer: Frequency

258.

Question: The number of degrees of freedom of a rigid diatomic molecule is -

Options:

A. 2

B. 3

C. 4

D. 5

Answer: 5

259.

Question: A point particle with charge q is placed inside a cube but not at its centre. The electric flux through any one side of the cube -

Options:

A. is zero

B. is q/Eo

C. is q/6Eo

D. can not be computed using Gauss' Law

Answer: can not be computed using Gauss' Law

260.

Question: A certain wire has resistance R. Another wire of the same material, has half the length and half the diameter of the first wire. The resistance of the second wire is -

Options:

A. 2R

B. R/4

C. R/2

D. 4R

Answer: 2R

261.

Question: In a Young's double slit experiment, the separation between slits is 'd' and the screen is a distance 'D' from the slits. 'D' is much greater than 'd' and is the wavelength of light. The number of bright fringes per unit width on the screen is -

Options:

A. Dd/λ

B. Dλ/d

C. d/Dλ

D. λD/d

Answer: d/Dλ

262.

Question: In a photoelectric effect experiment at a frequency above threshold, the number of. photoelectrons ejected is proportional to -

Options:

A. their kinetic energy

B. their potential energy

C. the frequency of incident light

D. the number of photons that hit the sample

Answer: the number of photons that hit the sample

263.

Question: Which of the followings can be a superconductor at 4 K ?

Options:

A. Silicon

B. Germanium

C. Diamond

D. Mercury

Answer: Mercury

264.

Question: The equation of continuity for the fluid flow can be derived from the conservation of -

Options:

A. mass

B. energy

C. momentum

D. pressure

Answer: mass

265.

Question: A 1.5 m woman wishes to see a full length image of herself in a plane mirror. The minimum mirror length required is -

Options:

A. 1.5 m

B. 3 m

C. 0.75 m

D. 6 m

Answer: 0.75 m

266.

Question: The product $\mu_0 \varepsilon_0$ has the same unit as -

Options:

A. (Velocity)^2

B. (Velocity)$^{-2}$

C. (Velocity)$^{-1}$

D. 1/(Velocity)^2

Answer: (Velocity)$^{-2}$

267.

Question: If A=6i-8j then 4 A has magnitude -

Options:

A. 10

B. 20

C. 40

D. 50

Answer: 40

268.

Question: When a haploid embryo is developed from egg or any other cell of an embryo sac of a plant without the act of fertilization, such a development is called -

Options:

A. Amphimixis

B. Non-recurrent apomixis

C. Recurrent apomixis

D. Adventive embryony

Answer: Non-recurrent apomixis

269.

Question: Which of the following algae lack motile cells in their life-cycle ?

Options:

A. Chlorophyceae

B. Xanthophyceae

C. Phaeophyceae

D. Rhodophyceae

Answer: Rhodophyceae

270.

Question: Which one of the plant growth regulators would you use, if you are asked to "bolt" a rosette plant like cabbage before flowering ?

Options:

A. Dormins

B. Cytokinins

C. Gibberellins

D. Auxins

Answer: Gibberellins

271.

Question: Photo respiration is accomplished in -

Options:

A. Chloroplast, peroxysomes and mitochondria

B. Chloroplast, golgibodics and mitochondria

C. Chloroplast, DNA and mitochondria

D. Chloroplast, RNA and mitochondria

Answer: Chloroplast, peroxysomes and mitochondria

272.

Question: What is 'Forest of Nephridia' in Earthworm ?

Options:

A. Septal Nephridia present in clitellar segments.

B. Integumentary Nephridia present in clitellar segments.

C. Pharyngeal Nephridia present in 4th, 5th and 6th segment.

D. All Nephridia present in posterior segments of body.

Answer: Integumentary Nephridia present in clitellar segments.

273.

Question: The organs of different species that are related to each other through common descent (origin) though become functionally different are called -

Options:

A. Vestigial

B. Analogous

C. Non-homologous

D. Homologous

Answer: Homologous

274.

Question: Characters of which of the following groups are present in all chordates in some stage or other of their life cycle ?

Options:

A. Mammary glands, Hair, Pharyngeal gill slits

B. Notochord, Pharyngeal gill slits, Dorsal tubular central nervous system

C. Notochord, Scales, Dorsal tubular central nervous system

D. Pharyngeal gill slits, vertebral column, Notochord

Answer: Notochord, Pharyngeal gill slits, Dorsal tubular central nervous system

275.

Question: A blastopore is found in -

Options:

A. blastula and is the opening of blastowel.

B. blastula and is the opening of archenteron.

C. gastrula and is the opening of blastowel.

D. gastrula and is the opening of archenteron.

Answer: gastrula and is the opening of archenteron.

276.

Question: Transfer of DNA from one bacterial cell to another by a bacteriophage is called as -

Options:

A. Transformation

B. Transduction

C. Translation

D. Competence

Answer: Transduction

277.

Question: Indian curd is obtained by fermentation of milk by -

Options:

A. Lactobacillus and Streptococcus bacteria

B. Lactobacillus and Clostridium bacteria

C. Lactobacillus and Micrococcus bacteria

D. Lactobacillus and Rhizobium bacteria

Answer: Lactobacillus and Streptococcus bacteria

278.

Question: Which one of the following is extrachromosomal, self replicating and circular DNA molecule present in bacterial cells ?

Options:

A. Cosmid

B. Plasmid

C. B-chromosomes

D. Bacteriophage

Answer: Plasmid

279.

Question: Match List-I and II and select the correct answer with the help of codes given below the lists:
List-I (Diseases)
(i) Diptheria
(ii) Whooping cough
(iii) Chicken pox
(iv) Measles
(v) Pneumonic plague
List-II (Microorganism genera)
(a) Varicella
(b) Rubeola
(c) Bordetella
(d) Yersinia
(e) Corynibacterium

Options:

A. (i) (e); (ii) (c); (iii) (a); (iv) (b); (v) (d)

B. (i) (e); (ii) (d); (iii) (b); (iv) (c); (v) (a)

C. (i) (a); (ii) (c); (iii) (c); (iv) (b); (v) (d)

D. (i) (a); (ii) (b); (iii) (d); (iv) (c); (v) (e)

Answer: (i) (e); (ii) (c); (iii) (a); (iv) (b); (v) (d)

280.

Question: After vaccination, the body builds up -

Options:

A. Lymph

B. Plasma

C. Antigens

D. Antibodies

Answer: Antibodies

281.

Question: The first hormone produced by bacterial culture is -

Options:

A. Testosterone

B. Thyroxin

C. Insulin

D. Adrenaline

Answer: Insulin

282.

Question: Following are the steps of the process of 'Recombinant DNA Technology' :
(i) Isolation of genetic material.
(ii) Cutting of DNA at specific sites.
(iii) Amplification of gene of Interest.
(iv) Insertion of Recombinant DNA into the host cell.
(v) Obtaining foreign gene product.
(vi) Downstream processing..
Which of the following is the correct sequence of the steps ?

Options:

A. (i), (ii), (iii), (iv), (v), (vi)

B. (v), (iii), (i), (ii), (iv), (vi)

C. (iii), (ii), (i), (iv), (v), (vi)

D. (ii), (i), (iii), (iv), (v), (vi)

Answer: (i), (ii), (iii), (iv), (v), (vi)

283.

Question: Restriction endonucleases are widely used in genetic engineering because -

Options:

A. these are proteolytic enzymes which can inactivate harmful proteins.

B. these can join different DNA fragments,

C. these can cut DNA at variable base sites.

D. these can cut DNA at specific base sites.

Answer: these can cut DNA at specific base sites.

284.

Question: The most effective method of in vitro amplication of desired genes is -

Options:

A. PCR (Polymerase Chain Reaction)

B. PAGE (Poly Acrylamide Gel Electrophoresis)

C. CE (Capillary Electrophoresis)

D. HPCE (High Performance Capillary Electrophoresis)

Answer: PCR (Polymerase Chain Reaction)

285.

Question: What is $ECOR_1$?

Options:

A. An enzyme capable of catalysing the joining of ends of DNA fragments.

B. A restriction endonuclease obtained from a bacterium.

C. A vector.

D. A bacteriophage.

Answer: A restriction endonuclease obtained from a bacterium.

286.

Question: The sheep 'Dolly' was created by -

Options:

A. Nuclear transplantation

B. Nuclear Fusion

C. Blastocyte fusion

D. Oocyte transplantation

Answer: Nuclear transplantation

287.

Question: Enzymes, Lysases are responsible for -

Options:

A. Hydrolysis of complex molecules

B. Addition of molecules to double bonds

C. Elimination of groups to create double bond

D. (2) and (3) both

Answer: (2) and (3) both

288.

Question: All Lipids upon hydrolysis yield -

Options:

A. Monocarboxylic acids

B. Dicarboxylic acids

C. Tricarboxylic acids

D. Mixture of above threc

Answer: Monocarboxylic acids

289.

Question: Which of the following is not an essential amino acid ?

Options:

A. Valine

B. Leucinc

C. Alanine

D. Isoleucine

Answer: Alanine

290.

Question: Glucose and fructose have following structures -

Options:

A. Both have furanose structure.

B. Both have pyranose structure.

C. Glucose has pyranose structure and fructose has furanose structure.

D. Glucose has furanose structure and fructose has pyranose structure.

Answer: Glucose has pyranose structure and fructose has furanose structure.

291.

Question: If a disc has moment of inertia I about the axis which is tangential and in plane of the disc, then the moment of inertia about the axis which is tangential and perpendicular to its plane will be :

Options:

A. 3I/2

B. I/2

C. 5I/2

D. I/2

Answer: 3I/2

292.

Question: When a mass m is suspended from a spring, the frequency of oscillation is found as f. If the spring is cut into two equal pieces and same mass is suspended from one of the piece, the frequency of oscillation in this case will be

Options:

A. f

B. 2f

C. f√2

D. f/√2

Answer: f√2

293.

Question: The acceleration due to gravity on the surface of earth is g. The value of acceleration due to gravity at a height (from the earth's surface) equal to half the radius of the earth will be

Options:

A. zero

B. 2g/3

C. 4g/9

D. g/2

Answer: 4g/9

294.

Question: Choose the wrong statement regarding moduli of elasticity.

Options:

A. Greater the value of moduli of elasticity, more elastic is material.

B. With rise in temperature, elasticity of material decreases.

C. For incompressible fluids the bulk modulus is infinite.

D. Shear modulus of material increases with rise in temperature.

Answer: Shear modulus of material increases with rise in temperature.

295.

Question: Two spherical balls of same material of masses m and 8 m respectively, falls in same fluid. If terminal velocity of first ball is v, then terminal velocity of second ball will be

Options:

A. zero

B. v

C. 2v

D. 4v

Answer: 4v

296.

Question: If 64 raindrops combine into a single big drop, then ratio of the total surface energy of the 64 drops to that of a single big drop is

Options:

   A. 16:1

   B. 8:1

   C. 4:1

   D. 1:1

   Answer: 4:1

297.

Question: A mixture contains 1 mole of helium (Cp = 2.5 R, Cv = 1.5 R) and 1 mole of hydrogen (Cp = 3.5 R, Cv = 2.5 R). The value of Cp for the mixture is

Options:

   A. 2R

   B. 3R

   C. 7R/3

   D. R

   Answer: 3R

298.

Question: A Carnot engine works between the temperatures 227° C and 127° C. If the work output of the engine is 10^4 J, then the amount of heat rejected to the sink will be :

Options:

   A. 1×10^4 J

   B. 2×10^4 J

   C. 4×10^4 J

   D. 5×10^4 J

   Answer: 4×10^4 J

299.

Question: An ideal black body emits maximum intensity of radiation of wavelength 500 nm at temperature 1227 °C. If its temperature is increased by 10^3 °C then the maximum emission wavelength will be

Options:

   A. 300 nm

   B. 350 nm

   C. 410 nm

   D. 425 nm

   Answer: 300 nm

300.

Question: A train approaches a stationary observer, with a velocity of 1/20 of velocity of sound. A sharp blast is blown with the whistle of the engine at equal intervals of one second. The interval between the successive blasts as heard by the observer is

Options:

   A. 20/19 S

   B. 1/20 S

   C. 19/20 S

   D. 1/19 S

   Answer: 19/20 S

301.

Question: The focal length of a concave mirror is f in air. Its focal length in water (refractive index 4/3) will be

Options:

   A. f

   B. 3f/4

   C. 4f/3

   D. 7f/3

   Answer: f

302.

Question: The angular magnification of microscope is 400 when the final image is formed at infinity. The optical tube length is 16 cm and the focal length of objective is 5 mm. The focal length of the eye piece is

Options:

   A. 0.25 cm

   B. 1.0 cm

   C. 2.0 cm

   D. 4.0 cm

   Answer: 2.0 cm

303.

Question: If a charge q is placed at one corner of cube, the flux through the cube is

Options:

   A. q/ε_0

   B. $q/4\varepsilon_0$

   C. $q/8\varepsilon_0$

   D. zero

   Answer: $q/8\varepsilon_0$

304.

Question: A network of four 10 μF capacitors is shown in figure. The equivalent capacitance of the network between points A and B is

Options:

A. 30/4 μF

B. 40 μF

C. 40/3 μF

D. 10 μF

Answer: 40/3 μF

305.

Question: In a meter bridge, the null point is found at a distance of 33.7 cm from terminal A (known resistance R is connected to gap near to A). If a resistance of 12 Ω is connected parallel to unknown resistance X (which is connected to gap near to terminal B), the null point is found at 51.9 cm. The value of X is

Options:

A. 13.5 Ω

B. 27.0 Ω

C. 25.5 Ω

D. 3.0 Ω

Answer: 13.5 Ω

306.

Question: The electric current produced by convective motion of metallic fluid in the outer core of the earth is known as

Options:

A. Seeback effect

B. Thomson effect

C. Dynamo effect

D. Meissner effect

Answer: Dynamo effect

307.

Question: A circular loop of area 0.015 m² is placed in a uniform magnetic field of 0.30 T. If its plane makes an angle of 37° with field, then the magnetic flux through the loop is

Options:

A. zero

B. 2.7 mWb

C. 36 mWb

D. 45 mWb

Answer: 2.7 mWb

308.

Question: A light bulb and an open coil inductor are connected in series to an ac source as shown in figure. Now an iron rod is inserted into the interior of the inductor. The glow of the light bulb

Options:

A. decreases

B. increases

C. unchanged

D. bulb will be fused

Answer: decreases

309.

Question: Let light of wavelength 600 nm is coming from a star. The limit of resolution of a telescope with objective lens of diameter 254 cm will be nearly

Options:

A. 5.8×10^{-7} radian

B. 2.9×10^{-7} radian

C. 1.4×10^{-7} radian

D. 0.72×10^{-7} radian

Answer: 2.9×10^{-7} radian

310.

Question: The ratio of energies of two photons is 1:2 then ratio of their momenta will be

Options:

A. $1:\sqrt{2}$

B. 1:2

C. $1:2\sqrt{2}$

D. 1:4

Answer: 1:2

311.

Question: The correct relation between half life (T) of radionuclide with its mean life (τ) is expressed as

Options:

A. $T = \tau/\ln 2$

B. $T = \ln 2/\tau$

C. $T = \tau/\pi^2$

D. $T = \tau\log_{10}2$

Answer: $T = \tau/\ln2$

312.

Question: For given circuit, the forward resistance of p-n junction is 50 Ω and reverse resistance is infinite. Then current flowing through 100 Ω resistance is

Options:

A. 0.01 A

B. 0.02 A

C. 0.024 A

D. 0.04 A

Answer: 0.02 A

313.

Question: For an amplitude modulated signal, ω_m and ω_c are angular frequency of message signal and carrier wave respectively then AM signals contains frequencies

Options:

A. only ω_m

B. ω_c and ω_m

C. $(\omega\_c - \omega\_m)$ and ω_m

D. $(\omega\_c - \omega\_m)$, ω_m and $(\omega\_c + \omega\_m)$

Answer: $(\omega\_c - \omega\_m)$, ω_m and $(\omega\_c + \omega\_m)$

314.

Question: To get an output Y = 0 in given circuit, which of the following sets of inputs will be incorrect?

Options:

A. 1 0 1

B. 1 1 0

C. 0 1 0

D. 1 0 0

Answer: 1 1 0

315.

Question: The reduced mass of hydrogen atom is (Here m - mass of electron; M - mass of proton)

Options:

A. m / (1 + m/M)

B. M / (1 + M/m)

C. m (1 + m/M)

D. m / (1 - m/M)

Answer: m / (1 + m/M)

316.

Question: A particle of mass m1 moving with u1 velocity collide with another particle of mass m2 which is initially in rest. If collision is perfectly inelastic then the fractional loss in the kinetic energy is

Options:

A. 1/2 m1 u1^2

B. m2 / m1

C. m1 / (m1 + m2)

D. m2 / (m1 + m2)

Answer: m2 / (m1 + m2)

317.

Question: A horizontal platform is rotating with uniform angular velocity around the vertical axis passing through its centre. At some instant a viscous fluid of mass m is dropped at the centre and is allowed to spread out and finally fall out. The angular velocity during the period

Options:

A. decreases continuously

B. decreases initially and increases again

C. increases continuously

D. increases initially and decreases again

Answer: decreases continuously

318.

Question: The differential equation of an oscillating system is
$$\frac{d^2x}{dt^2} + 2r\frac{dx}{dt} + \omega_0^2 x = 0$$
If $\omega_0 \gg r$ then the time in which energy becomes 1/e of its initial value is

Options:

A. 1/r

B. 1/(2r)

C. 1/(4r)

D. 2/r

Answer: 1/(2r)

319.

Question: The phase difference between displacement and driven force of forced oscillator in critical driving frequency condition will be

Options:

A. 0

B. $\pi/2$

C. π

D. $3\pi/2$

Answer: $\pi/2$

320.

Question: A uniform rope of length 10 m and mass 15 kg hangs vertically from a rigid support. A block of mass 5 kg is attached to the free end of the rope. If a transverse pulse of wavelength 0.04 m is produced at the lower end of the rope, the wavelength of the pulse when it reaches the top of the rope will be

Options:

A. 0.02 m

B. 0.04 m

C. 0.08 m

D. 0.16 m.

Answer: 0.08 m

321.

Question: The amplitude of a progressive wave is A and angular frequency is ω then energy density of the wave is (ρ is density of medium)

Options:

A. $1/2 \, \rho \, \omega^2 \, A^2$

B. $1/4 \, \rho \, \omega^2 \, A^2$

C. $1/2 \, \rho^2 \, \omega^2 \, A$

D. $1/4 \, \rho^2 \, \omega^2 \, A$

Answer: $1/2 \, \rho \, \omega^2 \, A^2$

322.

Question: The mean free path of gas molecules is directly proportional to nth power of diameter of molecules. Here n is

Options:

A. 1/2

B. -1/2

C. 2

D. -2

Answer: -2

323.

Question: At what temperature, the rms velocity of hydrogen molecule will be equal to the rms velocity of oxygen molecule at 47 °C?

Options:

A. 20 °C

B. 20 K

C. 5.8 °C

D. 273 °C

Answer: 20 K

324.

Question: In a interference pattern with two identical coherent sources, the intensity on the screen at a point where path difference is λ. is I_0. The intensity at a point where path difference is $\lambda/4$. will be

Options:

A. Zero

B. $I_0/4$

C. $I_0/2$

D. I_0

Answer: $I_0/2$

325.

Question: According to Dulong and Petit's law, the molar specific heat of solid at high temperature range, varies with nth power of absolute temperature. Here value of n is

Options:

A. Zero

B. 1

C. 2

D. 3

Answer: Zero

326.

Question: For a superconductor, relation between transition temperature T_c and critical field H_c is shown as

Options:

A. $H_c = H_0 (1 - T/T_c)$

B. $H_c = H_0 [1 - (T/T_c)^2]$

C. $H_c = H_0 [1 - (T_c/T)^2]$

D. $H_c = H_0 [1 + (T_c/T)^2]$

Answer: $H_c = H_0 [1 - (T/T_c)^2]$

327.

Question: The total number of states in first Brillouin zone of one dimensional crystal of length L will be (a - distance between lattice points)

Options:

A. L/a

B. $2L^2/a$

C. L^2/a

D. La

Answer: L/a

328.

Question: The dimension of $\sqrt{LC}$ is

Options:

A. $M^0L^0T^{-1}$

B. $M^0L^1T^{-1}$

C. $M^0L^1T^1$

D. $M^0L^0T^0$

Answer: $M^0L^0T^{-1}$

329.

Question: A 200 m long train passes over a 600 m long bridge. If the speed of train is 36 km/h, the time taken by the train to cross the bridge is

Options:

A. 60 s

B. 30 s

C. 80 s

D. 40 s

Answer: 80 s

330.

Question: Choose correct relation between the maximum height (H) and time of flight (T) of a projectile motion :

Options:

A. $H = 8 g T^2 \sin \theta$

B. $H = 1/8 g T^2$

C. $H = 1/(8 \sin \theta) gT$

D. $H = T \cot \theta$

Answer: $H = 1/8 g T^2$

331.

Question: If two vectors A = 6i – 8j + 4k and B = 4i – 6j + pk are mutually perpendicular, then value of p is

Options:

A. -9

B. -18

C. +4

D. 0

Answer: -18

332.

Question: A body is in equilibrium under the action of three forces F_1, F_2 and F_3. Then choose the wrong statement among the following:

Options:

A. $F_1 + F_2 + F_3 = 0$

B. $|F_1 - F_2| \le F_3 \le |F_1 + F_2|$

C. F_1, F_2 and F_3 can be represented by the three sides of a triangle.

D. $F_1 + F_2 + F_3 = 0$

Answer: $|F_1 - F_2| \le F_3 \le |F_1 + F_2|$

333.

Question: The work done to increase the velocity of a 1500 kg car from 36 km/h to 72 km/h is

Options:

A. 4.5×10^4 J

B. 2.25×10^5 J

C. 7.5×10^4 J

D. 4.5×10^5 J

Answer: 2.25×10^5 J

334.

Question: Which of the following complex is heteroleptic ?

Options:

A. $[Cu(CN)_4]^{2-}$

B. $[PtCl_4]^{2-}$

C. $[Co(NH_3)_6]^{3+}$

D. $[Co(NH_3)_4Cl_2]^+$

Answer: $[Co(NH_3)_4Cl_2]^+$

335.

Question: Which of the following is a co-ordination compound ?

Options:

A. $KCl.MgCl_2.6H_2O$

B. $FeSO_4.(NH_4)_2SO_4.6H_2O$

C. $KAl(SO_4)_2.12H_2O$

D. $K_3[(Al(C_2O_4)_3)]$

Answer: $K_3[(Al(C_2O_4)_3)]$

336.

Question: Which of the following order is not correct for filling of orbitals ?

Options:

A. 5d, 6p, 7s

B. 5s, 4d, 5p

C. 6s, 4f, 5d

D. 6s, 5p, 4f

Answer: 6s, 5p, 4f

337.

Question: The atom with $Z = 92$ and $A = 238$ is:

Options:

A. Pa

B. U

C. Np

D. Pu

Answer: U

338.

Question: In O_2F_2, the oxidation number of oxygen is:

Options:

A. -2

B. +1

C. +2

D. -1

Answer: +1

339.

Question: The conjugate base for the HCO_3^- is :

Options:

A. CO_3^{2-}

B. CO_2

C. H_2CO_3

D. $H_2CO_3^-$

Answer: CO_3^{2-}

340.

Question: pH of Human blood is :

Options:

A. 7.8

B. 6.4

C. 6.8

D. 7.4

Answer: 7.4

341.

Question: If the process is spontaneous then ΔG is :

Options:

A. $\Delta G = 0$

B. $\Delta G > 0$

C. $\Delta G < 0$

D. $\Delta G = \Delta H$

Answer: $\Delta G < 0$

342.

Question: If a liquid crystallises into a solid, entropy will be:

Options:

A. increases

B. decreases

C. zero

D. remains unchanged

Answer: decreases

343.

Question: In the following reaction, which species is undergoing reduction ?
$2Cu_2O(s) + Cu_2S(s) \rightarrow 6Cu(s) + SO_2$

Options:

A. Copper

B. Sulphur

C. Oxygen

D. Sulphur di oxide

Answer: Copper

344.

Question: Buckminster fullerene contains following numbers of five and six membered rings respectively :

Options:

A. 12, 12

B. 12, 20

C. 20, 20

D. 20, 12

Answer: 12, 20

345.

Question: Which of the following is an oxide of copper?

Options:

A. Bornite

B. Cuprite

C. Pentlandite

D. Anglesite

Answer: Cuprite

346.

Question: $(CH_3)_2C^+$ is more stable than $CH_3CH_2^+$ due to :

Options:

A. resonance effect

B. inductive effect

C. mesomeric effect

D. hyper conjugation

Answer: hyper conjugation

347.

Question: R_3N: act as :

Options:

A. electrophile

B. nucleophile

C. free radical

D. carbanion

Answer: nucleophile

348.

Question: In reaction
$CH_3COCl + AlCl_3$ (anhydrous) $\rightarrow C_6H_5COCH_3 + HCl$
the anhydrous $AlCl_3$ is acting as :

Options:

A. Lewis base

B. Lewis acid

C. Nucleophile

D. Free radical

Answer: Lewis acid

349.

Question: Which of the following polymer is thermosetting polymer ?

Options:

A. Terylene

B. Polystyrene

C. Bakelite

D. Neoprene

Answer: Bakelite

350.

Question: Polymer which is used in paints and synthesised by ethylene glycol and phthalic acid is

Options:

A. Dacron

B. Bakelite

C. Polystyrene

D. Glyptal

Answer: Glyptal

351.

Question: Drug which reduce fever is known as

Options:

A. barbiturates

B. antiseptic

C. antipyretic

D. antibiotic

Answer: antipyretic

352.

Question: Antifertility drug is :

Options:

A. aspartame

B. soframicine

C. novestrol

D. prontosil

Answer: novestrol

353.

Question: Non-reducing sugar among the following is :

Options:

A. Glucose

B. Sucrose

C. Maltose

D. Lactose

Answer: Sucrose

354.

Question: Which of the following natural amino acid is optically inactive ?

Options:

A. alanine

B. glycine

C. valine

D. aspartic acid

Answer: glycine

355.

Question: ΔH of adsorption is always :

Options:

A. zero

B. negative

C. positive

D. infinite

Answer: negative

356.

Question: Substances that decrease the activity of a catalyst are known as:

Options:

A. controllers

B. promoters

C. poisons

D. initiators

Answer: poisons

357.

Question: Which of the following is chemical pollutant in water?

Options:

A. Acrolein

B. Polychlorinated biphenyls

C. Peroxyacetyl nitrate

D. Ozone

Answer: Polychlorinated biphenyls

358.

Question: Which of the following metal interferes in the development and maturation of red blood cells?

Options:

A. Mercury

B. Lead

C. Cadmium

D. Arsenic

Answer: Lead

359.

Question: Which of the following gas is used in arc-welding?

Options:

A. Helium

B. Neon

C. Argon

D. Radon

Answer: Argon

360.

Question: The Geometry of $[Zn(NH_3)_4]^{2+}$ is :

Options:

A. Square planar

B. Pyramidal

C. Tetrahedral

D. Octahedral

Answer: Tetrahedral

361.

Question: Most stable oxidation state for chromium is :

Options:

A. +2

B. +6

C. +4

D. +3

Answer: +3

362.

Question: Maximum Paramagnetism shown by the following tripositive ion is:

Options:

A. La^{3+}

B. Lu^{3+}

C. Nd^{3+}

D. Ce^{3+}

Answer: Nd^{3+}

363.

Question: Which of the following element is essential for Vitamin B12?

Options:

A. Mo

B. Se

C. Co

D. Cr

Answer: Co

364.

Question: Unexpected activation effect on substitution reaction showed by toluene is due to

Options:

A. resonance

B. tautomerism

C. conjugation

D. hyper conjugation

Answer: hyper conjugation

365.

Question: In an IR spectra, there is a peak at 1715 cm-¹, the compound will be :

Options:

A. CH3-C-CH3

B. O

C. CH3-C-H

D. O

E. CH3-CH2-OH

F. CH2=CH-CH2-OH

Answer: CH3-C-CH3

366.

Question: If the rate of reaction does not depends upon the initial concentration of reactant, the order of reaction is :

Options:

A. first

B. second

C. zero

D. third

Answer: zero

367.

Question: If a non-volatile solute will be added in benzene at 30 °C, its vapour pressure will

Options:

A. increases

B. decreases

C. remains same

D. depend upon solute

Answer: decreases

368.

Question: Molar mass of acetic acid in benzene is 118 instead of 60 due to :

Options:

A. dissociation of molecules

B. association of molecules

C. free movement of molecules

D. solvation of molecules

Answer: association of molecules

369.

Question: On dilution the conductivity and equivalent conductivity of KC/ changes respectively

Options:

A. decreases, decreases

B. increases, decreases

C. decreases, increases

D. increases, increases

Answer: decreases, increases

370.

Question: Which of the following element does not shows $(n - 1) d^{10} ns^2$ configuration ?

Options:

A. Zn

B. Au

C. Cd

D. Hg

Answer: Au

371.

Question: Number of neutrons in $^{56}_{26}Fe$ will be

Options:

A. 26

B. 56

C. 30

D. 28

Answer: 30

372.

Question: Element having Z = 68 is related to :

Options:

A. s-block

B. p-block

C. d-block

D. f-block

Answer: f-block

373.

Question: For Z= PV/nRT Z is known as:

Options:

A. Probability factor

B. Collision factor

C. Compressibility factor

D. Boyle point

Answer: Compressibility factor

374.

Question: In pressure vs temperature (Kelvin) graph at constant molar volume, the lines of graph are known as:

Options:

A. isobar

B. isochore

C. isotherm

D. isotone

Answer: isochore

375.

Question: Which statement is correct for the repulsive interaction of electron pairs?

Options:

A. b.p-b.p > b.p - l.p > l.p – l.p

B. l.p-l.p > b.p - b.p > b.p - l.p

C. l.p-l.p > b.p - l.p > b.p - b.p

D. b.p-l.p > l.p - l.p > b.p - b.p

Answer: l.p-l.p > b.p - l.p > b.p - b.p

376.

Question: The geometry of BF3 will be

Options:

A. Linear

B. Pyramidal

C. Trigonal planer

D. Trigonal pyramidal

Answer: Trigonal planer

377.

Question: Which one of the following is an active melanine-producing organ/tissue?

Options:

A. Organ of Bojanus

B. Osphradium

C. Ink Gland

D. Green Gland

Answer: Ink Gland

378.

Question: Which of the following green house gas present in troposphere is primarily essential for sustenance of life on earth?

Options:

A. Carbon dioxide

B. Methane

C. Nitrous oxide

D. Ozone

Answer: Carbon dioxide

379.

Question: Which of the following is NOT a member of chlorophyceae ?

Options:

A. Chara

B. Oedogonium

C. Spirogyra

D. Cladophora

Answer: Chara

380.

Question: Independent sporophyte is present in

Options:

A. Anthoceros

B. Funaria

C. Marchantia

D. Adiantum

Answer: Adiantum

381.

Question: Lateral roots originate from

Options:

A. Endodermis

B. Epidermis

C. Pericycle

D. Medullary rays

Answer: Pericycle

382.

Question: Which of the following does not occur within mitochondria?

Options:

A. Krebs cycle

B. Glycolysis

C. ATP synthesis

D. Electron transport chain

Answer: Glycolysis

383.

Question: The number of DNA molecules in each chromosome is

Options:

A. one

B. upto 10

C. more than hundred

D. infinite

Answer: one

384.

Question: Alternate forms of a gene are known as

Options:

A. Tautomers

B. Isomers

C. Alleles

D. Polyploid.

Answer: Alleles

385.

Question: Which of the following occurs in Meiosis but not in Mitosis? Select the correct answer using the codes given below :
A. independent assortment
B. segregation of homologous chromosomes
C. crossing over
D. synapsis of homologues

Options:

A. A, B, C and D

B. A, B and D

C. B. C and D

D. B and C

Answer: A, B, C and D

386.

Question: According to Lamarck the causes of evolution are

Options:

A. inheritance of acquired characters and natural selection

B. innate tendency of organisms to evolve towards greater complexities and inheritance of acquired characters

C. use and disuse of organs followed by natural selection

D. generation of variations and natural selection

Answer: innate tendency of organisms to evolve towards greater complexities and inheritance of acquired characters

387.

Question: The term used for any asexual method of propagation not involving the normal production of embryos by fertilization is

Options:

A. Apospory

B. Apogamy

C. Apomixis

D. Parthenogenesis

Answer: Apomixis

388.

Question: Match the following and choose the correct answer using the codes given below:
Column I
A. Gynostegium
B. Gynobasic style
C. Papilionaceous corolla
D. Monoadelphous condition
E. Tetradinamous condition
Column II
i. Mustard
ii. Hibiscus
iii. Pisum
iv. Calotropis
v. Ocimum

Options:

A. v iv i iii ii

B. iv iii ii i v

C. ii i v iv iii

D. iv v iii ii i

Answer: iv v iii ii i

389.

Question: Small circular DNA molecules that are capable of self-replication are called

Options:

A. Introns

B. Exons

C. Plasmid

D. Transposable elements

Answer: Plasmid

390.

Question: Which of the following statements is incorrect?

Options:

A. Another name for a gene is cistron.

B. Point mutation can lead to nonsense mutations.

C. In a chromosome, hotspot are sites where mutations can occur at very high rate.

D. Frameshift mutations are caused by base substitutions.

Answer: Frameshift mutations are caused by base substitutions.

391.

Question: In Daphnia, during oogenesis, the first meiotic division is suppressed and the primary oocyte undergoes II maturation division. This type of parthenogenesis is called

Options:

A. Apomeiotic

B. Mitotic

C. Meiotic

D. Arrhenotoky

Answer: Apomeiotic

392.

Question: Centre for heat, touch, cold and pressure are in

Options:

A. Frontal lobe

B. Occipital lobe

C. Parietal lobe

D. Frontal as well as occipital lobe both

Answer: Parietal lobe

393.

Question: Which of the following is not synthesized from Amino acid precursor ?

Options:

A. Cholesterol

B. Chlorophyll

C. Cytochrome

D. Heme

Answer: Cholesterol

394.

Question: The antigen binding site of an antibody depicts:

Options:

A. Idiotype

B. Isotype

C. Allotype

D. Anti-Idiotype

Answer: Idiotype

395.

Question: Which one of the following is present in "H" band of striated muscles ?

Options:

A. Actinomyosin

B. Na ions

C. Myosine

D. Actin

Answer: Myosine

396.

Question: The blood of Mollusca contains

Options:

A. Potassium

B. Iron

C. Copper

D. Silver

Answer: Copper

397.

Question: The "death of neutrophil" means

Options:

A. Endocytosis

B. Pinocytosis

C. Necrosis

D. Aptosis

Answer: Aptosis

398.

Question: Heart is not myogenic in

Options:

A. Annelida

B. Mollusca

C. Pisces

D. Amphibia

Answer: Annelida

399.

Question: Cell lacking axons are

Options:

A. Amacrine cells

B. Kuffer's cells

C. Parietal cells

D. Olfactory cells

Answer: Amacrine cells

400.

Question: The origin of dentine is

Options:

A. Mesodermal

B. Endodermal

C. Ectodermal

D. Endodermal as well as ectodermal

Answer: Mesodermal

401.

Question: All water soluble vitamins serves as coenzymes in enzymatic-reactions, except:

Options:

A. Vitamin B_1

B. Vitamin B_5

C. Vitamin B_2

D. Vitamin C

Answer: Vitamin C

402.

Question: The excretory product of earthworm is

Options:

A. only Ammonia and Uric acid

B. only Urea and Amino acid

C. only Amino acid

D. Ammonia, Urea and traces of creatinine

Answer: Ammonia, Urea and traces of creatinine

403.

Question: Vital stains are used as artificial marker in fare map construction. Which of the following is not a vital stain ?

Options:

A. Nile blue sulphate

B. Janus green

C. Neilson red copper

D. Bismark Brown

Answer: Neilson red copper

404.

Question: The theory of evolution proposed by Lamarck is called as -

Options:

A. Theory of inheritance of acquired characters

B. Theory of natural selection

C. Theory of pangenesis

D. Theory of artificial selection

Answer: Theory of inheritance of acquired characters

405.

Question: Gene therapy was used for the first time in 1990 to treat the deficiency of which of the following in a four year old child?

Options:

A. Thymine triaminase

B. Adenosine diaminase

C. Thymine diaminase

D. Adenosine triaminase

Answer: Adenosine diaminase

406.

Question: The borid present between two monosaccharide units to form a polysaccharide is a -

Options:

A. Peptide bond

B. Vander Waals force

C. Glycosidic bond

D. Hydrogen bond

Answer: Glycosidic bond

407.

Question: Cytoskeleton comprises of -

Options:

A. Microtubules and microfilaments

B. Cell membrane

C. Golgi complex

D. Cell junctions

Answer: Microtubules and microfilaments

408.

Question: To observe Fraunhofer diffraction from a single slit, the light wave front incident on the slit should be -

Options:

A. Spherical

B. Elliptical

C. Plane

D. Cylindrical

Answer: Plane

409.

Question: Which of the following noble gas does not form clathrate compounds with quinol?

Options:

A. He

B. Kr

C. Ar

D. Xe

Answer: He

410.

Question: A well-known analgesic, anti-inflammatory antiplatelet and antipyretic drug is -

Options:

A. Aspirin

B. Chlordiazepoxide

C. Ranitidine

D. Terfenadine

Answer: Aspirin

411.

Question: In Science topics like pressure, temperature, humidity must be correlated with which subject?

Options:

A. Music.

B. Fine Arts

C. Language

D. Geography

Answer: Geography

412.

Question: Characteristics of scientific method are
(A) Objectivity
(B) Verifiability
(C) Predictability
(D) Subjectivity
(E) Indefinite
Select the most appropriate answer from options given below -

Options:

A. (A), (B) and.(E)

B. (B), (C) and (D)

C. (A), (C) and (E)

D. (A), (B) and (C)

Answer: (A), (B) and (C)

413.

Question: Who is the Patron of Science club in the school?

Options:

A. Student of senior class

B. Monitor of the class

C. Head of the Institution

D. Teacher-incharge

Answer: Head of the Institution

414.

Question: Field trips place primary emphasis on -

Options:

A. Science as a product

B. Science as a process of inquiry

C. Scientific theories

D. Scientific laws

Answer: Science as a process of inquiry

415.

Question: Different processes of Science such as observation, measurement, classification etc. are included in which part of the nature of Science?

Options:

A. Social perspective of Science

B. Substantive structure of Science

C. Syntactical structure of Science

D. Conceptual scheme of Science

Answer: Syntactical structure of Science

416.

Question: Student will be able to explain the process of filtration. This objective is related to which one of the following category?

Options:

A. Comprehension

B. Knowledge

C. Analysis

D. Evaluation

Answer: Comprehension

417.

Question: In which step of 5E's constructivist approach students relate learned concept with other related concepts and apply their knowledge and understanding to the real world?

Options:

A. Explore

B. Explain

C. Elaborate

D. Engage

Answer: Elaborate

418.

Question: Which one of the following is a limitation of inquiry approach?

Options:

A. it minimizes verbal learning.

B. It is based on intrinsic motivation.

C. In this the instruction become student centered rather than teacher centered.

D. This learning takes more time than receptive learning.

Answer: This learning takes more time than receptive learning.

419.

Question: Following are some characteristics of a teaching method
(A) Problem oriented
(B) Purposeful act.
(C) Completed in natural as well as social environment
Identify the teaching method which has all of the characteristics-

Options:

A. Inductive-Deductive Method

B. Project Method

C. Problem Solving Method.

D. Heuristic Method

Answer: Project Method

420.

Question: İn. Science laboratory, which of the following is the stock register in which daily use and consumption of articles are entered?

Options:

A. Necessity indicator register

B. Non-breakable register

C. Register for consumables

D. Purchase register

Answer: Register for consumables

421.

Question: According to Bloom's taxonomy of educational objectives, the hierarchical order of categories of cognitive domain is -

Options:

A. Comprehension - Knowledge - Application - Synthesis-Analysis-Evaluation

B. Comprehension-Application-Knowledge-Synthesis-Analysis-Evaluation

C. Knowledge-Comprehension-Application-Synthesis-Analysis-Evaluation

D. Knowledge-Comprehension-Application-Analysis-Synthesis-Evaluation

Answer: Knowledge-Comprehension-Application-Analysis-Synthesis-Evaluation

422.

Question: Which type of Science curriculum is recommended by National Curriculum Framework - 2005?

Options:

A. Hands-on, inquiry based

B. Subject centered

C. School based

D. Area based

Answer: Hands-on, inquiry based

423.

Question: Which of the following test measure students critical and independent thinking/expression?

Options:

A. Objective type test

B. Essay type test

C. Selection type test

D. Multiple choice type test

Answer: Essay type test

424.

Question: The difference between science club activities and classroom activities is -

Options:

A. In Science club students are provided activities to do whereas in classroom they are free to choose activities.

B. Science club activities are informal while classroom activities are formal.

C. Science club activities are in strict system whereas classroom activities provide freedom.

D. In Science club pupils work to satisfy teacher and in class to satisfy their parents.

Answer: Science club activities are informal while classroom activities are formal.

425.

Question: In Science Olympiad, Vivek scored 80 marks. He applied for.second attempt after a week. In second attempt also he scored 80 marks. This characteristic of test is known as -

Options:

A. Difficulty level

B. Discriminative

C. Reliability

D. Validity

Answer: Reliability

426.

Question: The concept of teaching aids is based on which of the following psychological principles?
(A) Active participation of the learner
(B) Activating sensory organs of the learner
(C) Teacher centeredness
(D) Providing concrete and direct-experiences
Select the correct option by using the code given below -

Options:

A. (A), (B) and (D)

B. (A), (C) and (D)

C. (A), (B) and (C)

D. (B), (C) and (D)

Answer: (A), (B) and (D)

427.

Question: Teacher is taking remedial class. The remedial teaching of teacher is based on the analysis of which test?

Options:

A. Achievement test

B. Norm-reference test

C. Personality test

D. Diagnostic test

Answer: Diagnostic test

428.

Question: While teaching, teacher states the rule and then presents examples to clarify the rule. The method followed by teacher in this situation is-

Options:

A. Inquiry

B. Problem solving

C. Inductive

D. Deductive

Answer: Deductive

429.

Question: "Science education should enable the learner to know the facts and principles of Science and its applications, consistent with the stage of cognitive development." This aim of Science education guides that -

Options:

A. Same content should be taught at all levels.

B. Same teaching methods but different assessment techniques should be at different levels.

C. Objectives, curriculum, methods, assessments etc. should be different for different levels.

D. Different teaching methods but same assessment techniques should be at different levels.

Answer: Objectives, curriculum, methods, assessments etc. should be different for different levels.

430.

Question: A teacher compare, contrast and associate new knowledge with previous knowledge. Teacher is in which step according to Herbartian approach of lesson planning?

Options:

A. Step-3

B. Step-1

C. Step-4

D. Step-2

Answer: Step-3

431.

Question: Which one of the following is not correctly matched ?

Options:

A. Ephyra larva - Auralia

B. Parenchymular larva - Porifera

C. Cydipped larva - Ctenophora

D. Rhabditiform larva - Wuchereria bancrofti

Answer: Rhabditiform larva - Wuchereria bancrofti

432.

Question: In amphibians, cells that form the neural tube come from the

Options:

A. ectoderm

B. mesoderm

C. notochord

D. somites

Answer: ectoderm

433.

Question: T cells mature in the

Options:

A. thyroid gland

B. thymus gland

C. spleen

D. bone marrow

Answer: thymus gland

434.

Question: A major function of Golgi bodies is

Options:

A. in light independent photosynthesis

B. in fermentation

C. for isolation of electron transport systems

D. in modification of proteins

Answer: in modification of proteins

435.

Question: Which one of the following is not required for DNA-cloning?

Options:

A. DNA ligase

B. A vector

C. Methylases

D. Restriction endonucleases

Answer: Methylases

436.

Question: The metabolite that bridges the gap between glycolysis and Krebs cycle is

Options:

A. oxaloacetate

B. pyruvate

C. acetyl coenzyme A

D. alpha ketoglutarate

Answer: acetyl coenzyme A

437.

Question: The sub-apical elongation in plants is induced by

Options:

A. Auxins

B. Gibberellins

C. Cytokinin

D. Ethylene

Answer: Gibberellins

438.

Question: The percentage of energy that is passed on from one trophic level to another in an ecosystem is

Options:

A. 10%

B. 50%

C. 80%

D. 100%

Answer: 10%

439.

Question: The gland associated with the production of C21, C19 and C18 steroid is

Options:

A. Testis

B. Thymus

C. Adrenal

D. Thyroid

Answer: Adrenal

440.

Question: Which of the following methods is most useful for the enzymatic amplification of specific gene segment of DNA?

Options:

A. DNA hybridization

B. Nucleotide sequencing

C. Polymerase chain reaction

D. Reverse transcription

Answer: Polymerase chain reaction

441.

Question: The biotic interactions, in which, one organism has an adverse effect on another is

Options:

A. Mutualism

B. Commensalism

C. Amensalism

D. Cooperation

Answer: Amensalism

442.

Question: The class of fungi which represents the link between true fungi and the protists is

Options:

A. Zygomycetes

B. Ascomycetes

C. Basidiomycetes

D. Chytridiomycetes

Answer: Chytridiomycetes

443.

Question: Which of the following part of a healthy plant should be used as explants, to produce haploid plant ?

Options:

A. Meristem

B. Pollen grain

C. Flower bud

D. Adventitious buds

Answer: Pollen grain

444.

Question: Mycoplasmas are different from the other prokaryotes by

Options:

A. presence of chitin in cell walls

B. presence of murein in cell walls

C. presence of proteins in cell walls

D. absence of cell wall itself

Answer: absence of cell wall itself

445.

Question: The placentation type present in lady's finger (Okra) is:

Options:

A. Parietal

B. Axile

C. Superficial

D. Free Central

Answer: Axile

446.

Question: An example of a species concerned with symbiotic nitrogen fixation is :

Options:

A. Pullularia

B. Chlorobium

C. Azotobacter

D. Frankia

Answer: Frankia

447.

Question: Which of the following is not a product of Recombinant DNA Technology?

Options:

A. GloFish

B. Bt-cotton

C. Flavr savr

D. Dolly

Answer: Dolly

448.

Question: Laboratory method is based on which principle ?

Options:

A. Learning by doing

B. Learning by seeing

C. Learning by rote

D. Learning by intuition

Answer: Learning by doing

449.

Question: Which of the following is not a principle of the use of audio-visual teaching aids ?

Options:

A. Principle of Preparation

B. Principle of Presentation

C. Principle of Selection

D. Principle of Observation

Answer: Principle of Observation

450.

Question: Which of the following is not a function of a teacher?

Options:

A. Planning

B. Guidance

C. Budgeting

D. Counseling

Answer: Budgeting

451.

Question: NCF-2005 is prepared by which organisation ?

Options:

A. NCERT

B. NUEPA

C. NIE

D. NCTE

Answer: NCERT

452.

Question: Which document recommended examination system as flexible and friendly in school education?

Options:

A. National Policy on Education, 1986

B. Program of Action, 1992

C. National Curriculum Framework, 2005

D. National Knowledge Commision, 2007

Answer: National Curriculum Framework, 2005

453.

Question: Which of the following educational objective is not included in creativity category according to RCEM method ?

Options:

A. Evaluate

B. Synthesize

C. Analyze

D. Verify

Answer: Verify

454.

Question: Which of the following option is not correct in relation to Blue Print of a question paper ?

Options:

A. Weightage to objectives

B. Weightage to teaching method

C. Weightage to type of questions

D. Weightage to content

Answer: Weightage to teaching method

455.

Question: Who propounded Linear programmed learning?

Options:

A. Crow & Crow

B. Thorndike

C. B.F. Skinner

D. S.S. Stevens

Answer: B.F. Skinner

456.

Question: Which of the following is not included in Emotional skills under CCE?

Options:

A. Reduction in fear

B. Increase in learning

C. Increase in empathy

D. Reduction in anger

Answer: Increase in learning

457.

Question: "Science and Mathematics should be taught on a compulsory basis to all pupils as a part of general education during first ten years of schooling." Who suggested this?

Options:

A. Kothari Commission

B. Yashpal Committee

C. Ishwarbhai Patel Committee

D. Mudaliar Commission

Answer: Kothari Commission

458.

Question: Which of the following is not a safety equipment of laboratory ?

Options:

A. Fire extinguisher

B. Bucket filled with sand

C. Blanket

D. Cardboard box

Answer: Cardboard box

459.

Question: Taxonomy of educational objectives is categorized in how many domains ?

Options:

A. 2

B. 3

C. 4

D. 5

Answer: 3

460.

Question: The highest level behaviour in Psychomotor domain is

Options:

A. Stimulus

B. Control

C. Coordination

D. Habit formation

Answer: Habit formation

461.

Question: Who gave the thought of developing scientific temper and removing superstitions in the society?

Options:

A. National Policy on Education, 1986

B. Kothari Commission, 1964

C. Mudaliar Commission, 1953

D. University Education Commission, 1949

Answer: Kothari Commission, 1964

462.

Question: Nature of Science can be explained by the interaction of -

Options:

A. Knowledge - Process - Society

B. Knowledge - Matter - Society

C. Process - Reaction – Understanding

D. Process - Awareness - Analysis

Answer: Knowledge - Process - Society

463.

Question: Furst's paradigm indicates the inter-relationship between

Options:

A. Educational objective - Specific objective - Writing procedure

B. Educational objective - Learning experiences - Evaluation procedure

C. Educational objective – Knowledge objective - Understanding procedure

D. Educational objective - Cognitive objective - Practical procedure

Answer: Educational objective - Learning experiences - Evaluation procedure

464.

Question: "Science can justify its place in the curriculum only when it produces important changes in young people - changes in their ways of thinking, in their habits of action and in the values they assign to what they have and what they do." Who gave this statement ?

Options:

A. Bloom & Simpson

B. Bloom & Crathwohl

C. Thurber & Collette

D. Thurber & Campbeel

Answer: Thurber & Collette

465.

Question: Comprehension does not involve :

Options:

A. Translation

B. Composition

C. Interpretation

D. Extrapolation

Answer: Composition

466.

Question: Which law is not related to project method?

Options:

A. Law of readiness

B. Law of exercise

C. Law of effect

D. Law of heredity

Answer: Law of heredity

467.

Question: The specific weak area of student in a science subject can be identified by :

Options:

A. Written work

B. Oral work

C. Diagnostic test

D. Remedial teaching

Answer: Diagnostic test

468.

Question: The relation between frequency of the damped oscillator (w*) and the frequency of the undamped oscillator (@) of a weakly damped oscillator is correctly represented by -

Options:

A. $\omega^* = \omega_o (1 - Y/2\omega_o)^2$

B. $\omega^* = \omega_o (1 - Y/4\omega_o)^2$

C. $\omega^* = \omega_o (1 + Y/4\omega_o)$

D. $\omega^* = \omega_o (1 + Y/2\omega_o)$

Answer: $\omega^* = \omega_o (1 - Y/2\omega_o)^2$

469.

Question: The relationship between conductance, specific conductance and cell constant is -

Options:

A. Specific conductance/Conducatance

B. conductance x specific conductance

C. Conductancee/specific conductance

D. conductance/specific conductance

Answer: Specific conductance/Conducatance

470.

Question: Which of the following lanthanides does not occur in nature?

Options:

A. Promethium

B. Samarium

C. Cerium

D. Neodymium

Answer: Promethium

471.

Question: A dielectric sphere is placed in a uniform electrostatic field Eo. The electric field inside the dielectric sphere will be (Er- permittivity of medium)

Options:

A. (2/Er) Eo

B. (3/(Er+2)) Eo

C. ((Er-1)/3) Eo

D. ((Er+2)/3) Eo

Answer: (3/(Er+2)) Eo

472.

Question: Which of the following is NOT correct?

Options:

A. The expectation value of an anti Hermitian operator is always imaginary.

B. Hermitian adjoint of an operator is always equal to its complex conjugate.

C. The expectation value of a Hermitian operator is always real.

D. The commutator of two Hermitian operators is anti Hermitian.

Answer: Hermitian adjoint of an operator is always equal to its complex conjugate.

473.

Question: A body falls freely from the top of a tower and it falls (7/16)th of the total distance in its last second. The time taken by the body for complete motion will be -

Options:

A. 7s

B. 9s

C. 4s

D. 2s

Answer: 4s

474.

Question: Frequency of crossing over depends on -.

Options:

A. Number of genes

B. Physical distance between genes

C. Length of genes

D. All of the above

Answer: Physical distance between genes

475.

Question: Which one of the following stains is, used in marking of fate maps?

Options:

A. Haematoxylin

B. Safranin

C. Acetocarmine

D. Neutral red

Answer: Neutral red

476.

Question: On treating sodium fusion extract with sodium nitroprusside, appearance of violet colour is due to which of the following?

Options:

A. $[Fe (CN)_5SNOS]^{4-}$

B. $[Fe (SCN)]^{2-}$

C. $[Fe (CN)_5 NO]^{2-}$

D. $Fe_4 [Fe (CN)_6]_3$

Answer: $[Fe (CN)_5SNOS]^{4-}$

477.

Question: Which of the following element is chalcogen?

Options:

A. At

B. Pb

C. Te

D. Tl

Answer: Te

478.

Question: Which of the following has the highest magnetic moment?

Options:

A. $[Fe (CN)_6]^{3-}$

B. $[Fe F_6]^{3-}$

C. $[Co F_6]^{3-}$

D. $[Mn (CN)_6]^{3-}$

Answer: $[Fe F_6]^{3-}$

479.

Question: A source containing a mixture of hydrogen and deuterium atoms emits a red doublet at $\lambda = 6570$Å, whose separation is 1.8 Å. The minimum number of lines required in a plane grating, which can resolve the doublet in the first order is -

Options:

A. 2992

B. 5386

C. 3650

D. 9693

Answer: 3650

480.

Question: Which of these is not a characteristic of class Osteichthyes?

Options:

A. They are Oviparous, Ovoviviparous, and Viviparous

B. Found in all types of water

C. Placoid scales are present

D. Presence of air bladder

Answer: Placoid scales are present

481.

Question: Match List-I with List-II and select the correct answer by using the codes given below the Lists
List - I
(A) Mulberry silk-moth.
(B) Muga silk-moth
(C) Eri silk-moth
(D) Oak silk-moth
List - II
(i) Philosamia ricini
(ii) Antheraea pernyi
(iii) Bombyx mori
(iv) Antheraea assamensis

Options:

A. A-iii, B-ii, C-iv, D-i

B. A-i, B-iv, C-ii, D-iii

C. A-iv, B-iii, C-ii, D-i

D. A-iii, B-iv, C-i, D-ii

Answer: A-iii, B-iv, C-i, D-ii

482.

Question: Which among the following hormone is not secreted by placenta?

Options:

A. Progestogens

B. Human chorionic gonadotropin

C. Human placental lactogen

D. Follicle slimulating hormone

Answer: Follicle slimulating hormone

483.

Question: Which particle is not a Lepton?

Options:

A. Proton

B. Neutrino

C. Muon

D. Electron

Answer: Proton

484.

Question: Tomato, Brinjal and Potatol belongs to which one of the family of Angiosperms?

Options:

A. Liliaceae

B. Brassicaceae

C. Malvaceae

D. Solanaceae

Answer: Solanaceae

485.

Question: Diseases like cystic fibrosis and phenyl ketonuria are associated with which of the following?

Options:

A. Sex linked disease

B. Dominant genes

C. Autosomal recessive genes

D. Modifier genes

Answer: Autosomal recessive genes

486.

Question: Match the species in column I with the type of hybrid orbitals in column II and give the correct code -
Column I
(i) SF_4
(ii) IF_5
(iii) NO_2^+
(iv) NH_4^+
Column II
(a) sp^3d^2
(b) d^2sp^3
(c) sp^3d
(d) sp^3
(e) sp

Options:

A. (i) - d, (ii) - a, (iii) - b, (iv) - e

B. (i) - c, (ii) - b, (iii) - d, (iv) - e

C. (i) - d, (ii) - b, (iii) - e, (iv) - a

D. (i) - c, (ii) - a, (iii) - e, (iv) - d

Answer: (i) - c, (ii) - a, (iii) - e, (iv) - d

487.

Question: Example of primary meristem present between mature tissue is -

Options:

A. Phellogen

B. Shoot apical meristem

C. Intercalary meristem

D. Root apical meristem

Answer: Intercalary meristem

488.

Question: Produt 'A' in the above reaction is -

Options:

A. 2HCHO

B. $2CH_3COOH$

C. CH_3-O-CH_3

D. $2CH_3OH$

Answer: $2CH_3COOH$

489.

Question: A lead sphere of mass 'm' falls in a viscous liquid with a terminal velocity v. Another lead ball of mass 8m will fall through the same liquid with a terminal velocity -

Options:

A. 8v

B. v

C. 2v

D. 4v

Answer: 4v

490.

Question: 75% of a reaction of the first order was completed in 32 minutes. What is the time for completion of half of the reaction?

Options:

A. 32 minutes

B. 16 minutes

C. 8 minutes

D. 4 minutes

Answer: 16 minutes

491.

Question: A carnot engine whose sink is at 300 K, has an efficiency of 40%. By how much should the temperature of source be increased so as to increase its efficiency by 50% of the original efficiency?

Options:

A. 120 K

B. 200 K

C. 250 K

D. 150 K

Answer: 250 K

492.

Question: Choose correct relation between Gibbs free energy (G), enthalpy (H), internal energy (U) and entropy (S) of a system described by (PVT) -

Options:

A. G=H+TS = U + TS + PV

B. G=H-TS = U - TS + PV

C. G=H-PV= U+ TS-PV

D. G=H+PV = U + TS + PV

Answer: G=H-TS = U - TS + PV

493.

Question: Self replicating, circular, double-stranded DNA molecules that occur as extrachromosomal units in bacterial cells are called -

Options:

A. Bacteriophage

B. RNA

C. Plasmid

D. Virus

Answer: Plasmid

494.

Question: If following all four particles have same Kinetic energy, which one have the largest de-Broglie wavelength?

Options:

A. Electron

B. Neutron

C. Alpha Particle

D. Proton

Answer: Electron

495.

Question: Which feature of Endodermal cells restricts the movement of water through them?

Options:

A. Presence of casparian strips

B. Presence of callose bands

C. Presence of chitinous cell wall

D. Presence of cell inclusions

Answer: Presence of casparian strips

496.

Question: The mass of 1 mole of glucose is -

Options:

A. 360.162 g

B. 90.625 g

C. 270.258 g

D. 180.162 g

Answer: 180.162 g

497.

Question: The spin only magnetic moment of $[Co(NH_3)_6]^{3+}$ complex is -

Options:

A. 1.73 D

B. 4.9 D

C. 2.83 D

D. 0

Answer: 0

498.

Question: Consider a one-dimensional particle which is confined within a region $0 \leq x \leq a$ and whose wave function is $y(x, t) = \sin(\pi x/2a)\, e^{-\mathrm{Iwt}}$, then the potential V in this region is given by -.

Options:

A. $V = \hbar\omega - \hbar^2\pi^2/2ma^2$

B. $V = \hbar\omega - \hbar^2\pi^2/8ma^2$

C. $V = $ zero

D. $V = \hbar\omega + \hbar^2\pi^2/2ma^2$

Answer: $V = \hbar\omega - \hbar^2\pi^2/8ma^2$

499.

Question: The density of a linear rod of length L varies as $\rho = 3x$, where x is the distance from left end. The distance of centre of mass from left end is -

Options:

A. 2L/3

B. L/4

C. 4L/3

D. L/2

Answer: 2L/3

500.

Question: Coiling of shell in Limnaea peregra is affected by -

Options:

A. Paternal genes

B. Chromosomes

C. Maternal genes

D. Maternal and paternal both types of genes

Answer: Maternal genes

501.

Question: DNA fragments separated by gel electrophoresis are visualised by staining with ethidium bromide under UV radiation, the colour of these DNA bands (fragment) is -

Options:

A. dark blue

B. bright orange

C. black

D. bright green

Answer: bright orange

502.

Question: The transport across the membrane through carrier protein which allows molecules to move across independent of other molecules is called -

Options:

A. Antiport

B. Symport

C. Monoport

D. Uniport

Answer: Uniport

503.

Question: DNA polymerase I is also known as -

Options:

A. Meselson enzyme

B. Teminase

C. Kornberg enzyme

D. Baltimore enzyme

Answer: Kornberg enzyme

504.

Question: The vapour pressure of pure benzene at certain temperature is 0.85 bar; A non-volatile non electrolyte solid weighing 0.5g when added to 39 g of benzene (Molar mass $= 78$ g mol^{-1}) then, vapour pressure of the solution is 0.845 bar. The molar mass of solid substance is -

Options:

A. 150 g mol^{-1}

B. 340 g mol^{-1}

C. 100 g mol^{-1}

D. 170 g mol^{-1}

Answer: 170 g mol^{-1}

505.

Question: The IR spectrum of ethylalcohol does not give which of the following peak?

Options:

A. Band at 2924 cm^{-1}

B. Strong band at 1730 cm^{-1}

C. Strong band at 3300 cm^{-1}

D. Band at 1050 cm^{-1}

Answer: Strong band at 1730 cm^{-1}

506.

Question: Classification of class reptilia is based on -

Options:

A. Presence and absence of certain openings through temporal region of skull

B. Structure of heart

C. Habit and Habitat

D. Types of exoskeleton

Answer: Presence and absence of certain openings through temporal region of skull

507.

Question: $2C_2H_2 + 3O_2$ --$(CH_3COO)_2Mn$--> $A + 2H_2O$ Produt 'A' in the above reaction is -

Options:

A. 2HCHO

B. $2CH_3COOH$

C. CH_3-O-CH_3

D. $2CH_3OH$

Answer: $2CH_3COOH$

508.

Question: Enzymes containing which metal play an important role in the pigmentation of skin?

Options:

A. Ca

B. Mg

C. Fe

D. Cu

Answer: Cu

509.

Question: An example of naturally occurring antitranspirant is -

Options:

A. Phenyl mercuric chloride

B. Polyethylene

C. Abscisic acid

D. Dimethyl silicone

Answer: Abscisic acid

510.

Question: The nucleus of U238 emits α-particle and converts into Th234. The velocity of emitted a particle is v and its kinetic energy is E. Then Kinetic energy of residual nucleus Th234 (Kth) is -

Options:

A. $KTh = 117E$

B. $Kth = 117v$

C. $KTh = E / 117$

D. $Kth = V / 117$

Answer: $KTh = E / 117$

511.

Question: The largest gland of the human body is -

Options:

A. Pancreas

B. Liver

C. Kidney

D. Stomach

Answer: Liver

512.

Question: Which of these is not an indeterminate type of inflorescence?

Options:

A. Helicoid

B. Spike

C. Raceme

D. Panicle

Answer: Helicoid

513.

Question: Map of DNA prepared by cleavage of DNA at specific sites followed by the identification of the locations of the breakpoints is called -

Options:

A. Polymerization

B. Electrophoresis

C. Restriction mapping

D. Hybridization

Answer: Restriction mapping

514.

Question: A conducting circular loop is placed in a uniform magnetic field B with its plane normal to the field. If the radius of the loop starts shrinking at the rate dr/dt' then the magnitude of induced emf at the instant when the radius is r, is -

Options:

A. $\pi r^2 B$ dr/dt

B. $\pi r B$ dr/dt

C. $2\pi r B$ dr/dt

D. $2\pi r^2 B$ dr/dt

Answer: $2\pi r B$ dr/dt

515.

Question: The kinetic energy of a body at any displacement X is denoted by $K = Bx / (X^2 + A^2)$. If dimensions of B are given by $M^a L^b T^c$, then a+b+c will be equal to -

Options:

A. 4

B. 2

C. 7

D. 5

Answer: 2

516.

Question: $I^-(aq) + MnO_4 (aq) + H_2O (l) \rightarrow I_2 (s) + MnO_2 (s) + OH^-(aq)$
The coefficients of I, MnO_4 and H_2O in the balanced redox reaction are respectively -

Options:

A. 6,1,2

B. 4,3,4

C. 6,2,4

D. 3,5,4

Answer: 6,2,4

517.

Question: The work done by a force $F = 5x\hat{I}N$ in displacing a particle from x = 3m to x = 5m is -

Options:

A. 75 J

B. 40 J

C. 20 J

D. 80 J

Answer: 40 J

518.

Question: The orbital speed of the electron in the ground state of hydrogen atom is v. Its orbital speed when it is excited to the energy state -3.4 eV will be -

Options:

A. v/2

B. v/4

C. 3.4 v

D. v/3.4

Answer: v/2

519.

Question: The energy spectrum of a one dimensional quantum simple harmonic oscillator is -

Options:

A. Discrete and non- degenerate

B. Continuous and degenerate

C. Discrete and degenerate

D. Continuous and non-degenerate

Answer: Discrete and non- degenerate

520.

Question: A box of 10 kg is placed on a rough surface. If the coefficient of static friction is $\mu s = 0.4$, then the force of static friction when applied force is 30 N will be - (take g = 10 m/s²)

Options:

A. 20 N

B. 40 N

C. 24 N

D. 30 N

Answer: 30 N

521.

Question: Nucleic acids that acts as enzymes are -

Options:

A. Ribozyme

B. Nucleozyme

C. Abzyme

D. Phosphozyme

Answer: Ribozyme

522.

Question: The average energy released by the fission process is 200 MeV. If the reactor is working at a power level of 8 MW continuously, then the number of fissions per second will be -

Options:

A. 6.25×10^{17}

B. 2.5×10^{13}

C. 3.125×10^{13}

D. 2.5×10^{17}

Answer: 2.5×10^{17}

523.

Question: $R\text{-}C=C\text{-}R + H_2$ - (Pd/C) -> X
$R\text{-}C=C\text{-}R + H_2$ - (Na/Liq. NH3) -> Y
X and Y are respectively -

Options:

A. Cis-alkene, trans-alkene

B. Both trans-alkene

C. Both cis-alkene

D. Trans-alkene, cis-alkene

Answer: Cis-alkene, trans-alkene

524.

Question: Which among the following is an inhibitor of seed germination?

Options:

A. 6-Benzylamino purine

B. Kinetin

C. GA3

D. Coumarin

Answer: Coumarin

525.

Question: Which of these immunoglobulin is present primarily in blood and interstitial fluids and can cross placenta?

Options:

A. IgA

B. IgD

C. IgM

D. IgG

Answer: IgG

526.

Question: Interaction between two species in which one species is benefited and the other is neither harmed nor benefited is called -

Options:

A. Commensalism

B. Mutualism

C. Parasitism

D. Predation

Answer: Commensalism

527.

Question: Look into these two groups -
Group-l
(A) Eri silk
(B) Maggot therapy
(C) Lac
(D) Cantharidin
Group-II
(i) Lytta vesicatoria
(ii). Kerria lacca
(iii) Samia cynthia ricini
(iv) Lucilia sericata
The correct match is -

Options:

A. A-iii, B-iv, C-i, D-ii

B. A-iv, B-iii, C-ii, D-i

C. A-iii, B-iv, C-ii, D-i

D. A-i, B-ii, C-iii, D-iv

Answer: A-iii, B-iv, C-ii, D-i

528.

Question: Among the following vitamins, the one whose deficiency causes pernicious anaemia?

Options:

A. Retinol

B. Ascorbic acid

C. Pyridoxine

D. Cobalamin

Answer: Cobalamin

529.

Question: The pka of acetic acid and pKb of ammonium hydroxide are 4.76 and 4.75 respectively. What will be the pH of ammonium acetate solution?

Options:

A. 7.005

B. 0.01

C. 7

D. 9.51

Answer: 7.005

530.

Question: "No two electrons in an atom can have the same set of four quantum numbers." is the statement of which of the following?

Options:

A. Aufbau principle

B. Pauli Exclusion principle

C. Hund's rule of Maximum Multiplicity

D. (n+l) rule

Answer: Pauli Exclusion principle

531.

Question: The electronic configuration of two elements A and B are given below, the molecular formula of compound formed from A and B will be -
A = $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^3$
B = $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$

Options:

A. AB3

B. AB

C. A2B

D. AB2

Answer: AB3

532.

Question: Select the option from the following sets (i to iv) which is not permissible for an electron in an atom -
(i) n=2; I=1, m=0, s = +1/2
(ii) n=3, l=3, m=-3, s= +1/2
(iii) n=3, l=2, m=-2, s= 1
(iv) n=4, I=3, m=-2, s= +1/2

Options:

A. Only (ii)

B. Only (i)

C. (i) and (iv)

D. (ii) and (iii)

Answer: (ii) and (iii)

533.

Question: The escape velocity on the Earth's surface is 11.2 km/s. If a body is projected with velocity 15 km/s from the Earth's surface, its speed when it just overcomes the Earth's gravitational field will be (Approx) -

Options:

A. 3.8 km/s

B. 10 km/s

C. 11.2 km/s

D. 7.6 km/s

Answer: 10 km/s

534.

Question: Substance added to cement to slow down its setting process is -

Options:

A. Plaster of Paris

B. Silica

C. Gypsum

D. Alumina

Answer: Gypsum

535.

Question: Which of the following is not involved in cell proliferation and growth factor in multicellular animals?

Options:

A. Platelet derived growth factor

B. Interleukin -3

C. Erythropoietin

D. Interleukin -2

Answer: Interleukin -2

536.

Question: In angiosperms, the fusion of one male gamete with two polar nuclei is termed as -

Options:

A. Triple fusion

B. Apospory

C. Double fertilization

D. Parthenocarpy

Answer: Triple fusion

537.

Question: An electric dipole having dipole moment A is placed at origin O, such that its equator, at point A is y-axis as shown in figure. The electric field direction is along y-axis, then angular position of A (r, θ) is -

Options:

A. $\theta = \tan^{-1}\sqrt{3}$

B. $\theta = \tan^{-1}\sqrt{2}$

C. $\theta = 45°$

D. $\theta = \tan^{-1}\sqrt{5}$

Answer: $\theta = \tan^{-1}\sqrt{2}$

538.

Question: Which one of the following is an example of covalent or network solid?

Options:

A. CaF_2

B. SIC

C. CO_2

D. ZnS

Answer: SIC

539.

Question: Which of the following is not a green house gas?

Options:

A. CO_2

B. N_2O

C. CH_4

D. N_2

Answer: N_2

540.

Question: The type of crystal system when axial distances a ≠ b≠ c and axial angles $\alpha = \gamma = 90°$ and β≠ 90° is -

Options:

A. Monoclinic

B. Trigonal

C. Tetragonal

D. Triclinic

Answer: Monoclinic

541.

Question: Which among the following functions represent a physically acceptable wave function?

Options:

A. $i(x) = 2x^2$

B. $f(x) = 5.\sin(\pi x/2)$

C. $h^2(x) = 9x$

D. $g(x) = -(1/2)|2x|$

Answer: $f(x) = 5.\sin(\pi x/2)$

542.

Question: The distance between a convex lens and a plane mirror is 10 cm. The parallel rays incident on the convex lens after reflection from the mirror form image at the optical centre of the lens. Focal length of lens is -

Options:

A. 40 cm

B. 10 cm

C. 20 cm

D. 5 cm

Answer: 20 cm

543.

Question: If $|A \times B| = \sqrt{3}\, A \cdot B$, then the value $A\,|A + B|$ is -

Options:

A. A + B

B. $\sqrt{(A^2 + B^2 + \sqrt{3}\,AB)}$

C. $\sqrt{(A^2 + B^2 + AB)}$

D. $\sqrt{(A^2 + B^2 + 3\,AB)}$

Answer: $\sqrt{(A^2 + B^2 + AB)}$

544.

Question: Reserve food material in Red algae is -

Options:

A. Floridean starch

B. Mannitol

C. Laminarin starch

D. Glycogen

Answer: Floridean starch

545.

Question: Chemical formula of hydronitrous acid is -

Options:

A. H4N2O4

B. H2N2O2

C. H2N2O4

D. H2NO2

Answer: H2N2O2

546.

Question: The correct order of ionic radii of Tb3+, Gd³+, Eu3+, Sm³+ and Pm³+ is -

Options:

A. Tb3+> Gd3+> Eu3+> Sm3+> Pm3+

B. Pm3+> Eu3+> Sm3+> Gd3+> Tb3+

C. Pm3+> Sm3+> Eu3+> Gd3+> Tb3+

D. Eu3+> Sm3+> Tb3+> Gd3+> Pm3+

Answer: Pm3+> Sm3+> Eu3+> Gd3+> Tb3+

547.

Question: Which of the following is a group of facultative long day plants?

Options:

A. Pea, Barley, Wheat

B. Pea, Cotton, Soybean

C. Oat, Sorgam, Rice

D. Wheat, Soybean, Rice

Answer: Pea, Barley, Wheat

548.

Question: Abnormal secondary growth is found in -

Options:

A. Dracaena

B. Cucurbita

C. Helianthus

D. Triticum

Answer: Dracaena

549.

Question: In crassulacean acid metabolism, in the presence of which enzyme oxaloacetate' is reduced to malate?

Options:

A. Malate Dehydrogenase

B. PEP Carboxylase

C. Malate Carboxylase

D. Malate Synthetase

Answer: Malate Dehydrogenase

550.

Question: tris-(ethane-1,2-diamine) cobalt (III) sulphate is -

Options:

A. [Co (en)]2 (SO4)3

B. [Co (H2N-CH2-CH2-NH2)3]2 (SO4)3

C. [Co (en)3] SO4

D. [Co (H2N-CH2-CH2-NH2)]3 (SO4)2

Answer: [Co (H2N-CH2-CH2-NH2)3]2 (SO4)3

551.

Question: A current of 0.5 A flows through a wire. The number of electrons passing through any cross. section of the wire in 8 seconds will be -

Options:

A. 2.5 x 10^19

B. 4 x 10^18

C. 6.4 × 10^19

D. 4 × 10^19

Answer: 2.5 x 10^19

552.

Question: For the equilibrium 2NO (g) + Cl2 (g) ⇌ 2NOCl (g)
Kp is related to Kc by the relation.

Options:

A. Kp = Kc/(RT)²

B. Kp = Kc/RT

C. Kp = Kc (RT)

D. Kp = Kc (RT)²

Answer: Kp = Kc/RT

553.

Question: Which among the following statement is not true for gram-positive bacteria?

Options:

A. Teichoic acid present in the cell wall.

B. Cell wall is primarily made up of peptidoglycan.

C. Thickness of cell wall is 20-80 nm.

D. Cell envelope is composed of three layers.

Answer: Cell envelope is composed of three layers.

554.

Question: Neoprene is prepared by polymerisation of which of the following ?

Options:

A. 2-chloro-1, 3-butadiene

B. 2-methyl 1, 3-butadiene

C. 1, 3-butadiene

D. Acrylonitrile

Answer: 2-chloro-1, 3-butadiene

555.

Question: The monomers of dacron are :

Options:

A. decane and decanol

B. decanone and decanol

C. Ethylene glycol and terephthalic acid

D. Ethylene glygol and phthalic acid

Answer: Ethylene glycol and terephthalic acid

556.

Question: The example of oligosaccharide is :

Options:

A. Sucrose

B. Glucose

C. Ribose

D. Cellulose

Answer: Sucrose

557.

Question: Deficiency of which of the following vitamin causes pernicious anaemia ?

Options:

A. Vitamin-B_1

B. Vitamin-B_2

C. Vitamin-B_6

D. Vitamin-B_{12}

Answer: Vitamin-B_{12}

558.

Question: Which of the following statement is not correct for nucleic acids ?

Options:

A. A unit formed by the attachment of a base to 1' position of sugar is known as nucleoside.

B. Nucleoside linked to phosphoric acid at 5' position of sugar gives nucleotide.

C. Nucleotides are joined together by phosphodiester linkage between 3' and 5' carbon atoms of the pentose sugar.

D. A unit formed by the attachment of base to 1' position of sugar is known as nucleotide.

Answer: A unit formed by the attachment of base to 1' position of sugar is known as nucleotide.

559.

Question: The IUPAC name of following compound is $CH_3-C-CH_2-CH_2-CH_2-C-OH$
0
0

Options:

A. 6-Carboxy, hexan-2-one

B. 5-Oxo hexanoic acid

C. Butyl methyl ketone

D. 1,5-diketohexanol

Answer: 5-Oxo hexanoic acid

560.

Question: Which of the following is a disinfectant ?

Options:

A. Soframicine

B. Furacine

C. 0.2% solution of phenol

D. 1% solution of phenol

Answer: 1% solution of phenol

561.

Question: Which of the following is not a derivative of barbituric acid ?

Options:

A. Equanil

B. Veronal

C. Amytal

D. Nembutal

Answer: Equanil

562.

Question: Freundlich adsorption isotherm is expressed as equation

Options:

A. $m = kp^{1/n}$ (n > 1)

B. x

C. $m = kP^n$ (n > 1)

D. x

E. $m = kP^n$ (n > 1)

F. x

G. $m = kP^{1/n}$ (n > 1)

H. x

Answer: $m = kp^{1/n}$ (n > 1)
x

563.

Question: Which of the following acts as promoter for iron in Haber's process?

Options:

A. Mn

B. Mo

C. Mg

D. W

Answer: Mo

564.

Question: An example of gas dispersed in solid is

Options:

A. Cloud

B. Froth

C. Fog

D. Pumice Stone

Answer: Pumice Stone

565.

Question: The polymer having strongest intermolecular forces is

Options:

A. Neoprene

B. Polythene

C. Nylon-6

D. Buna-S

Answer: Nylon-6

566.

Question: Excess of which ion in drinking water causes methemoglobinemia ?

Options:

A. F^-

B. SO_4^{2-}

C. NO_3^-

D. Cl^-

Answer: NO_3^-

567.

Question: Which of the following is used as cryogenic agent ?

Options:

A. Liquid Helium

B. Liquid Neon

C. Liquid Argon

D. Liquid Xenon

Answer: Liquid Helium

568.

Question: The correct order of colour intensity of Silver halides is :

Options:

A. AgCl < AgI < AgBr

B. AgCl < AgBr < AgI

C. AgI < AgBr < AgCl

D. AgBr < AgCl < AgI

Answer: AgCl < AgBr < AgI

569.

Question: Which of the following pair of elements does not have almost same size ?

Options:

A. Zr, Hf

B. Mo, W

C. Nb, Os

D. Pd, Pt

Answer: Nb, Os

570.

Question: Wilson's disease causes accumulation of which metal in the liver, kidney and brain ?

Options:

A. Cu

B. Fe

C. Ca

D. Mg

Answer: Cu

571.

Question: Which of the following is not a common component of Photo-chemical smog ?

Options:

A. PAN (Peroxy Acetyl Nitrate)

B. O_3

C. Nitric Oxide

D. CFCs

Answer: CFCs

572.

Question: λmax for the following compound is :

Options:

A. 273 nm

B. 293 nm

C. 303 nm

D. 313 nm

Answer: 273 nm

573.

Question: The $t_{1/2}$ of a reaction is halved as the initial concentration of the reactant is doubled. What is the order of the reaction?

Options:

A. 0

B. 1

C. 2

D. 3

Answer: 2

574.

Question: What is the standard potential E° of the cell $Zn|Zn^{2+}$ (1M) || I^- (1M) | CuI | Cu of $E°Zn^{2+}$ | Zn = -0.76V and $E°Cu^+$ | Cu = -0.17V ?

Options:

A. 1.10 V

B. 0.93 V

C. -0.93 V

D. 0.59 V

Answer: 0.59 V

575.

Question: 18 g of glucose ($C_6H_{12}O_6$) is dissolved in 1 kg of water, at what temperature will water boil at 1.013 bar ? (Kb for water = 0.52 K kg mol⁻¹)

Options:

A. 0.052 K

B. 0.52 K

C. 373.15 K

D. 373.202 K

Answer: 373.202 K

576.

Question: The reaction of diazonium salt with aniline to give p-amino azo benzene is an example of which type of reaction ?

Options:

A. Electrophilic addition reaction

B. Nucleophilic addition reaction

C. Electrophilic substitution reaction

D. Nucleophilic substitution reaction

Answer: Electrophilic substitution reaction

577.

Question: Functions of smooth muscles, cardiac muscles, organs and glands are regulated by which of the following system?

Options:

A. Parasympathetic

B. Sympathetic

C. Central nervous

D. Autonomic Nervous System

Answer: Autonomic Nervous System

578.

Question: Which of the following is not a part of the Kidney structure ?

Options:

A. Malpighian body

B. Malpighian tubule

C. Glomerulus

D. Loop of Henle

Answer: Malpighian tubule

579.

Question: In cockroach the cavities of foregut and hindgut are lined with

Options:

A. Salivary Glands

B. Gizzard

C. Chitinous teeth

D. Cuticle

Answer: Cuticle

580.

Question: Which of the following concept is attributed to Charles Darwin ?

Options:

A. Use and disuse of organs is of great importance in evolution.

B. Every cell comes from pre-existing cells.

C. In the struggle for existence, the fittest would survive.

D. The gametes carry only one character of the pairs of contrasting characters.

Answer: In the struggle for existence, the fittest would survive.

581.

Question: Match the structures given in Column I with the tissue given in Column II in which they are present. Select the correct answer using the codes given below :
Column I
(a) Chondrocyte
(b) Fat Cells
(c) Myofibril
(d) Axon
(e) Periosteum
Column II
(i) Nervous tissue
(ii) Voluntary muscle fibre
(iii) Cartilage
(iv) Bone
(v) Adipose tissue

Options:

A. (ii) (iii) (v) (iv) (i)

B. (iv) (v) (i) (ii) (iii)

C. (iii) (v) (ii) (i) (iv)

D. (v) (i) (iv) (ii) (iii)

Answer: (iii) (v) (ii) (i) (iv)

582.

Question: Probiotics are

Options:

A. cancer inducing microbes

B. safe antibiotics

C. a kind of food allergen

D. live microbial food supplement

Answer: live microbial food supplement

583.

Question: Ti plasmid used in genetic enginneering is obtained from

Options:

A. Bacillus thuringiensis

B. Agrobacterium rhizogens

C. Agrobacterium tumefaciens

D. Thermus aquaticus

Answer: Agrobacterium tumefaciens

584.

Question: Which one of the following phylum is characterised by absence of true coelom ?

Options:

A. Nematoda

B. Echinodermata

C. Mollusca

D. Annelida

Answer: Nematoda

585.

Question: Select the incorrect statement given below.

Options:

A. Mycoplasma are bacteria that lack cell wall.

B. Bacteria are small infectious agents that replicates only inside the living cells of host.

C. Viroids are infectious RNA molecules.

D. Prions are infectious protein particles.

Answer: Bacteria are small infectious agents that replicates only inside the living cells of host.

586.

Question: The nervous system in humans develop from embryonic

Options:

A. Ectoderm

B. Endoderm

C. Mesoderm

D. Both endoderm and mesoderm

Answer: Ectoderm

587.

Question: Crossing over takes place between

Options:

A. two chromatids of a chromosome

B. sister chromatids of homologous chromosomes

C. non-sister chromatids of homologous chromosomes

D. non-sister chromatids of non-homologous chromosomes

Answer: non-sister chromatids of homologous chromosomes

588.

Question: When a 1 kg lump of metal travelling with speed 0.4 c, its momentum is p. If its speed is doubled the momentum of metal lump will be -

Options:

A. 2 p

B. More than 4 p

C. 4 p

D. More than 2 p but less than 4 p

Answer: More than 2 p but less than 4 p

589.

Question: Natural rubber is a linear polymer of -

Options:

A. 2-methyl-1,3 - butadiene

B. 2-chloro-1,3- butadiene

C. 1,3-butadiene

D. 2-cyano-1,3- butadiene

Answer: 2-methyl-1,3 - butadiene

590.

Question: Formation of interfascicular cambium and cork cambium from fully differentiated parenchymatous cells is possible due to -

Options:

A. Reverse differentiation

B. Differentiation

C. Dedifferentiation

D. Redifferentiation

Answer: Dedifferentiation

591.

Question: Which of the following is pyridoxine?

Options:

A. Vitamin B12

B. Vitamin B2

C. Vitamin B1

D. Vitamin B6

Answer: Vitamin B6

592.

Question: λmax of following compound is - R

Options:

A. 300 nm

B. 343 nm

C. 338 nm

D. 333 nm

Answer: 333 nm

593.

Question: Wildlife Institute of India is situated at -

Options:

A. Dehradun

B. Mumbai

C. Jaisalmer

D. Jaipur

Answer: Dehradun

594.

Question: The blood glands in Pheritema, are found in which segments?

Options:

A. 7,8,9

B. 1,2,3

C. 4,5,6

D. 10, 11, 12

Answer: 4,5,6

595.

Question: Mitochondria are present in which region of the sperm?

Options:

A. Tail`

B. Neck

C. Acrosome

D. Middle piece

Answer: Middle piece

596.

Question: Homolytic fission of a covalent bond results in the formation of -

Options:

A. Carbocation

B. Carbanion

C. Free radical

D. A heteropolar species

Answer: Free radical

597.

Question: The correct order of decreasing acid strength is -

Options:

A. $CICH_2COOH > Cl_2CHCOOH > CI_3C COOH > CH_3COOH$

B. $CH_3COOH > CICH_2COOH > Cl_2CHCOOH > Cl_3C COOH$

C. $Cl_2CHCOOH > CH_3COOH > CICH_2COOH > CI_3C COOH$

D. $CI_3C COOH > Cl_2CHCOOH > CICH_2COOH > CH_3COOH$

Answer: $CI_3C COOH > Cl_2CHCOOH > CICH_2COOH > CH_3COOH$

598.

Question: Select the correct statement -.

Options:

A. Light-harvesting system in photosynthesis is called antennae

B. Reaction centre in photosynthesis is formed by xanthophyll pigments only

C. Reaction centre of PS-I in P680

D. Reaction centre of PS-II is P700

Answer: Light-harvesting system in photosynthesis is called antennae

599.

Question: Which of the following is not a characteristic feature of class Aves?

Options:

A. Renal portal system is well developed

B. Exoskeleton is epidermal and horny

C. Heterocoelous vertebrae

D. Large eyes with sclerotic plates and a pecten

Answer: Renal portal system is well developed

600.

Question: A fish 40 cm beneath the surface of a pond sees a bird flying directly overhead. The bird is actually 18 cm above the water. The distance of the bird as seen from the fish will be -

Options:

A. 58 cm

B. 64 cm

C. 44 cm

D. 60 cm

Answer: 64 cm

601.

Question: Which of the following has lowest value of electronegativity on Pauling scale?

Options:

A. Na

B. Mg

C. Be

D. Li

Answer: Na

602.

Question: The moment of inertia of a thin square plate ABCD of uniform thickness about an axis passing through the centre O and perpendicular to the plate is-
(a) $I_1 + I_2$
(b) $I_3 + I_4$
(c) $I_1 + I_3$
(d) $I_1 + I_2 + I_3 + I_4$
Where I_1, I_2, I_3 and I_4 are respectively, the moments of inertia about axes 1, 2, 3 & 4 which are in the plane of the plate.
Select the correct answer using the code given below -

Options:

A. Only (a) and (b)

B. Only (a)

C. Only (a), (b) and (c)

D. All the four (a), (b), (c) and (d)

Answer: Only (a), (b) and (c)

603.

Question: A body of mass 'm' accelerates uniformly from rest to velocity V1 in time t1. The instantaneous power delivered to the body as a function of time 't' is -

Options:

A. $mv_1 t / t_1$

B. $mv_1 t / t_1^2$

C. $mv_1^2 t / t_1^2$

D. $mv_1^2 t^2 / t_1$

Answer: $mv_1^2 t / t_1^2$

604.

Question: Ultimate acceptor of electrons in electron transport system is -

Options:

A. $NADH_2$

B. Cytochrome c

C. O_2

D. Cytochrome a3

Answer: O_2

605.

Question: A stone is dropped from a height h. It hits the ground with a certain momentum p. If the same stone is dropped from a height 2h, the momentum when it hits the ground will change to-

Options:

A. 1.73p

B. 1.5p

C. 1.41p

D. 2p

Answer: 1.41p

606.

Question: The muscular wall gizzard of Earthworm consists of -

Options:

A. Longitudinal and oblique muscle fibres

B. Circular muscle fibres

C. Oblique muscle fibres

D. Longitudinal muscle fibres

Answer: Circular muscle fibres

607.

Question: On the basis of data given below, predict which of the following gases shows least adsorption on a definite amount of charcoal?
Gas CO_2 SO_2 CH_4 H_2
Critical temperature/K 304 630 190 33,

Options:

A. H_2

B. CH_4

C. CO_2

D. SO_2

Answer: H2

608.

Question: Which of the following electronic arrangements in molecular orbitals is correctly represented?

Options:

A. $Be_2 = KK, \sigma_2s^2, \sigma^*_2s^2$

B. $Na_2 = KK, LL, \sigma_3s^1$

C. $He_2^+ = \sigma_1s^2, \sigma^*_1s^1$

D. $Li_2 = KK, \sigma_2s^1$

Answer: $He_2^+ = \sigma_1s^2, \sigma^*_1s^1$

609.

Question: Christmas factor is also known as.-

Options:

A. Factor III

B. Factor X

C. Factor XIII

D. Factor IX

Answer: Factor IX

610.

Question: The "Red Data Book" is published and maintained by -

Options:

A. WWF

B. Ministry of Environment, Govt. of India

C. The International Union for Conservation of Nature

D. UNESCO

Answer: The International Union for Conservation of Nature

611.

Question: Development, of female gametophyte in Gnetum is -

Options:

A. Tetrasporic

B. Bisporic

C. Monosporic

D. Trisporic

Answer: Tetrasporic

612.

Question: The gametophytic, non vascular, seedless plants which lack complex tissue organization having alternation of generation are -

Options:

A. Moss

B. Mushroom

C. Fern

D. Algae

Answer: Moss

613.

Question: Two different metallic wires A and B of same radius and same length are joined to have a long wire. If its one end is fixed and on applying force on other end, elongation in this wire is 4 cm. If $Y_B = 3Y_A$, then change in length of wire B is - (Y-Young's modulus)

Options:

A. 1 cm

B. 2 cm

C. 4 cm

D. 3 cm

Answer: 1 cm

614.

Question: A sample of 'm' kg water is slowly heated from temperature T_1 to temperature T_2, the change in the entropy of the water will be -

Options:

A. $ms \ln (T_2-T_1)$

B. $ms / \ln(T_2-T_1)$

C. $ms \ln (T_2/T_1)$

D. $ms (T_2-T_1)$

Answer: $ms \ln (T_2/T_1)$

615.

Question: The density of quantum states of (E) in. a 3-dimensional system in the energy range between E and E + dE is proportional to $m^a E^b$, here value of 'a' and 'b' are respectivelý -

Options:

A. 3/2 and 1/2

B. 2 and 1/2

C. 3/2 and 3/2

D. 1/2 and 3/2

Answer: 3/2 and 1/2

616.

Question: Three point charges 2q, Q and q are placed along x axis at points x = 0, x = 1/2 and x = 1 respectively. If the net force on charge q is zero, then Q is equal to -

Options:

A. -q/3

B. q

C. -q/2

D. -q/4

Answer: -q/2

617.

Question: Two particles of the same mass 'm' moving. in different directions with the same speed v collide and stick together. After the collision, the speed of the composite particle is $v/\sqrt{2}$. The angle between the velocities of the two particles before collision is -

Options:

A. 45°

B. 120°

C. 60°

D. 90°

Answer: 90°

618.

Question: Which one of the following is not a correct Maxwell's equation for harmonically varying fields?

Options:

A. $\nabla \cdot D = \rho$

B. $\nabla \cdot B = 0$

C. $\nabla \times H + j\omega D = J$

D. $\nabla \times E + j\omega B = 0$

Answer: $\nabla \times H + j\omega D = J$

619.

Question: In arrangement of two polarising sheets, their planes are oriented in such a way that light intensity transmitted is maximum (Assume incident light is unpolarised). Through what angle either sheet be turned so that transmitted intensity drops to one fourth of the maximum?

Options:

A. $\pi/3$ or $2\pi/3$

B. $\pi/6$ or $5\pi/6$

C. $\pi/4$ or $3\pi/4$

D. $\pi/2$

Answer: $\pi/3$ or $2\pi/3$

620.

Question: Inactivation of transcription factor by insertion of virus, that can convert one stable cell type into another, is known as.-

Options:

A. Teratoma formation

B. Translation

C. Transcription

D. Trans differentiation

Answer: Trans differentiation

621.

Question: Which of the following statement is not true for WBC (White Blood Cells)?

Options:

A. They are known as leukocytes

B. Neutrophils secrete heparin

C. Neutrophils are most abundant leukocytes

D. They are nucleated

Answer: Neutrophils secrete heparin

622.

Question: IUPAC name for

O
‖
CH3 - C - CH2 - CH2 - C - OH
‖
O
is -

Options:

A. 1,4-dioxopentanol

B. 1-hydroxy pentane -1,4-dione

C. 4-oxo pentanoic acid

D. 1- carboxy butan -3-one

Answer: 4-oxo pentanoic acid

623.

Question: In Young's double slit experiment, the ratio of the intensities at two points P and Q on the screen, where the path differences between the interfering waves are respectively $\lambda/4$ and $\lambda/2$ will be -

Options:

A. 1/2

B. Infinite

C. 2

D. Zero

Answer: 1/2

624.

Question: Calcium plays an important role in which of the following?

Options:

A. Oxygen carrier in blood

B. Helpful in blood clotting

C. Oxidation of aldehydes

D. Oxygen storage in muscle tissue

Answer: Helpful in blood clotting

625.

Question: A carrier wave of Peak voltage 12 V is used to transmit a message signal. Then the peak voltage of the modulating signal in order to have a modulation index of 75% will be

Options:

A. 6 V

B. 9 V

C. 12 V

D. 16 V

Answer: 9 V

626.

Question: For the two particle system shown in figure, the magnitude of the net angular momentum of the system about origin is

Options:

A. 42 kg m²/s

B. 54 kg m²/s

C. 48 kg m²/s

D. 6 kg m²/s

Answer: 42 kg m²/s

627.

Question: The quality factor of an oscillator whose amplitude decreases to half its initial value in every 100 oscillation, is

Options:

A. 50 π / In 2

B. 100 π / In 2

C. 51 π / In 2

D. 101 π / In 2

Answer: 100 π / In 2

628.

Question: Two coherent sources of light S_1 and S_2 of wavelength λ emitting in phase are placed respectively at origin and at $(0, 3\lambda)$. A detector of light is to be moved along positive x-axis from origin. The location of the first order maxima obtained on the x-axis due to interference of light is at

Options:

A. x = 1.25 λ

B. x = 4 λ

C. x = λ

D. x = $\lambda/2$

Answer: 4 λ

629.

Question: The current amplification factor for a transistor in common base configuration is 0.95. If in this configuration the emitter current is 2 mA, then the base current will be

Options:

A. 0.1 mA

B. 0.2 mA

C. 0.19 mA

D. 1.9 mA

Answer: 0.1 mA

630.

Question: The heat capacity in Debye (θD) approximation at low temperatures of one dimensional monoatomic lattice is proportional to
(θD is Debye temperature)

Options:

A. $T^2 / \theta D$

B. $T^3 / \theta D$

C. $(T / \theta D)^3$

D. $T^4 / \theta D$

Answer: $(T / \theta D)^3$

631.

Question: A uniform rope of mass m and length L hangs from a ceiling. The speed of transverse waves in the rope at a point at a distance x from the lower end of the rope is

Options:

A. $\sqrt{2gx}$

B. $\sqrt{(gx / 2)}$

C. $2\sqrt{gx}$

D. $\sqrt{gx}$

Answer: $\sqrt{gx}$

632.

Question: An electric motor operated at 100 V is used to lift a 10 kg mass to a height of 10 m. It completes the job in 5 s and withdraws 3 A current from the source. Heat produced (in joule) in motor will be {assume no other losses to be present, g = 10 m/s²}

Options:

A. 100

B. 200

C. 300

D. 500

Answer: 500

633.

Question: The diameter of ^{4}He atom is 1Å. One mol of the gas occupies 20 litres at 20 K. The mean free path of the molecules will be, nearly {Given R = 8.4 J mol^{-1} K^{-1} and Avogadro number N_A = 6 x 10^{23} mol^{-1}}

Options:

A. 7.5 x 10^{-7} m

B. 3.25 x 10^{-7} m

C. 1.5 x 10^{-7} m

D. 4.9 x 10^{-7} m

Answer: 7.5 x 10^{-7} m

634.

Question: Four point charges -Q, -q, +2q and +2Q respectively are placed on the four vertices of a square. The relation between Q and q for which the potential at the centre of square is zero, is

Options:

A. Q = q

B. Q = 1/q

C. Q = -q

D. Q = -1/q

Answer: Q = -q

635.

Question: The resistance of a wire of iron at 20 °C is 10 Ω and temperature co-efficient of resistivity for iron is 5 × 10^{-3}/ °C. At 20 °C it carries a current of 30 mA keeping potential difference across the wire constant, its temperature is raised to 120 °C. Now, current in wire is

Options:

A. 20 mA

B. 15 mA

C. 10 mA

D. 40 mA

Answer: 20 mA

636.

Question: Consider a bar magnet which is 100 mm long and having pole strength of 40 A-m. The magnetic induction at a point 120 mm from the centre of magnet on the perpendicular bisector of the line joining the poles, is

Options:

A. 91 μT

B. 182 μT

C. 364 μT

D. 546 μT

Answer: 182 μT

637.

Question: For a particle moving along a straight line, the velocity - displacement graph is as shown in fig. The magnitude of acceleration of the particle when its displacement is 3 m, will be

Options:

A. $4\sqrt{3}$ m/s²

B. $3\sqrt{3}$ m/s²

C. $\sqrt{3}$ m/s²

D. $4/\sqrt{3}$ m/s²

Answer: $3\sqrt{3}$ m/s²

638.

Question: The De-broglie wavelength associated with an electron, accelerated through a potential difference V is

Options:

A. $\lambda_e = 12.27/\sqrt{V}$ Å

B. $\lambda_e = 12.27/V$ Å

C. $\lambda_e = 12.27 \times \sqrt{V}$ Å

D. $\lambda_e = 12.27 \times V$ Å

Answer: $\lambda_e = 12.27/\sqrt{V}$ Å

639.

Question: Two plane mirrors are parallel to each other and separated 20 cm apart. A luminous point is placed between them and 5 cm from mirror 1 (Figure). The distances of two nearest images formed by mirror 1 from it are respectively:

Options:

A. 5 cm, 35 cm

B. 5 cm, 15 cm

C. 5 cm, 10 cm

D. 5 cm, 20 cm

Answer: 5 cm, 35 cm

640.

Question: The number of moles of methane required to produce 22g CO_2 after complete combustion is

Options:

A. 0.1 mol

B. 0.5 mol

C. 1 mol

D. 2 mol

Answer: 0.5 mol

641.

Question: A straight rod of length L has one of its end of the origin and the other at x = L. If the linear mass density of the rod is given by $\lambda = Ax$, where A is a constant, the location of its centre of mass is given by

Options:

A. $X_{cm} = L/2$

B. $X_{cm} = 3/4$ L

C. $X_{cm} = L/3$

D. $X_{cm} = 2/3$ L

Answer: $X_{cm} = 2/3$ L

642.

Question: van der Waals gas equation is

Options:

A. $(P - an^2 / V^2)(V - nb) = nRT$

B. $(P + an^2 / V^2)(V + nb) = nRT$

C. $(P + an^2 / V^2)(V - nb) = nRT$

D. $(P + an)(V - a/V^2) = nRT$

Answer: $(P + an^2 / V^2)(V - nb) = nRT$

643.

Question: Which of the following pair have same bond order?

Options:

A. N_2, F_2

B. N_2, NO^+

C. O_2^-, CO

D. O_2^-, N_2

Answer: N_2, NO^+

644.

Question: Match the List-I with List-II:
List-I
I. XeF_4
II. BrF_5
III. C/F_3
IV. SF_4
List-II
(a) T-Shape
(b) Square planar
(c) See-Saw
(d) Square pyramid

Options:

A. (a) (b) (c) (d)

B. (d) (c) (b) (a)

C. (d) (b) (c) (a)

D. (b) (d) (a) (c)

Answer: (b) (d) (a) (c)

645.

Question: Among the following ions/molecule, which one has the highest magnetic moment value ?

Options:

A. $[Cr(H_2O)_6]^{3+}$

B. $[Fe(H_2O)_6]^{2+}$

C. $[Zn(H_2O)_6]^{2+}$

D. $[Ni(CO)_4]$

Answer: $[Fe(H_2O)_6]^{2+}$

646.

Question: At constant pressure, the volume of a fixed mass of a gas is directly proportional to its absolute temperature. It is the statement of

Options:

A. Boyle's Law

B. Charle's Law

C. Gay-Lussac's Law

D. Avogadro's Law

Answer: Charle's Law

647.

Question: The correct order of first ionisation enthalpies of elements Li, Be, B and C of second period is :

Options:

A. C > Be > B > Li

B. C > B > Be > Li

C. Li > Be > B > C

D. B > C > Be > Li

Answer: C > Be > B > Li

648.

Question: Which of the following has least negative electron gain enthalpy?

Options:

A. P

B. S

C. Cl

D. F

Answer: P

649.

Question: For the reaction
$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$ ΔH = -ve
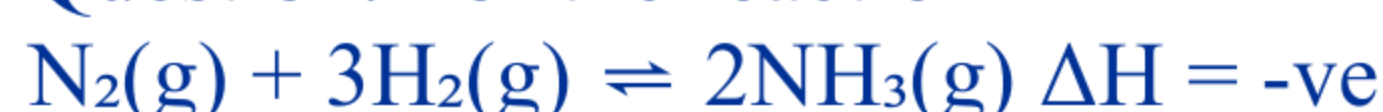
Options:

A. $Kp = KC(RT)^{-2}$

B. $Kp = KC(RT)^{2}$

C. $Kp = KC(RT)$

D. $Kp = KC(RT)^{-1}$

Answer: $Kp = KC(RT)^{-2}$

650.

Question: At equilibrium the concentrations of $N_2 = 3.0 \times 10^{-3}$ M, $O_2 = 4.2 \times 10^{-3}$ M and NO = 2.8×10^{-3} M in a sealed vessel at 800 K. What will be Kc for the reaction $N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$?

Options:

A. 0.622

B. 0.722

C. 0.822

D. 0.922

Answer: 0.622

651.

Question: For the process to occur under adiabatic conditions, the correct condition is

Options:

A. $\Delta T = 0$

B. $\Delta P = 0$

C. $q = 0$

D. $\omega = 0$

Answer: $q = 0$

652.

Question: Choose the correct answer. A thermodynamic state function is a quantity

Options:

A. used to determine heat changes.

B. whose value is independent of path.

C. used to determine pressure-volume work.

D. whose value depends on temperature only.

Answer: whose value is independent of path.

653.

Question: Which of the following co-ordination entity is chiral (Optically active)?

Options:

A. $[Fe(CN)_6]^{3-}$

B. cis - $[CrCl_2(OX)_2]^{3-}$

C. trans - $[CrCl_2(OX)_2]^{3-}$

D. $[Fe(CN)_6]^{4-}$

Answer: cis - $[CrCl_2(OX)_2]^{3-}$

654.

Question: In the following reaction,
$P_4(s) + 3OH^-(aq) + 3H_2O(l) \rightarrow PH_3(g) + 3H_2PO_2^-(aq)$
the oxidation states of P in P_4, PH_3 and $H_2PO_2^-$ are respectively

Options:

A. +4, +3, +2

B. +4, -3, +1

C. 0, +3, +1

D. 0, -3, +1

Answer: 0, -3, +1

655.

Question: The substance which reacts with gangue to form fusible material is called

Options:

A. Flux

B. Slag

C. Ore

D. Catalyst

Answer: Flux

656.

Question: Among the following, carbonate ore of Zinc is:

Options:

A. Zincblende

B. Calamine

C. Sphalerite

D. Zincite

Answer: Calamine

657.

Question: When ammonia (aq) is added to a cupric salt solution, the deep blue colour is observed due to formation of

Options:

A. $[Cu(OH)_4]^{2-}$(aq)

B. $[Cu(NH_3)_4]^{2+}$(aq)

C. $[Cu(H_2O)_2(NH_3)_2]^{2+}$

D. $[Cu(H_2O)_4]^{2+}$

Answer: $[Cu(NH_3)_4]^{2+}$(aq)

658.

Question: Which of the following oxo-acids of sulphur has peroxide linkage ?

Options:

A. H_2SO_3

B. H_2SO_4

C. $H_2S_2O_8$

D. $H_2S_2O_7$

Answer: $H_2S_2O_8$

659.

Question: Which of the following molecules represents the type of hybridisation sp^3, sp^2, sp^2, sp from left to right carbon atoms ?

Options:

A. $HC \equiv C–C = CH$

B. $CH_2=CH–C \equiv CH$

C. $CH_3–CH = CH–CH_3$

D. $CH_3–CH = CH–CN$

Answer: $CH_3–CH = CH–CN$

660.

Question: In the reaction given below, the species undergoing oxidation is
$H_2S(g) + Cl_2(g) \rightarrow 2HCl + S$

Options:

A. Cl_2

B. H_2S

C. HCl

D. S

Answer: H_2S

661.

Question: An example of "an algal colony consisting of definite number of cells in a specific arrangement" is :

Options:

A. Nostoc

B. Ulothrix

C. Volvox

D. Polysiphonia

Answer: Volvox

662.

Question: The technical term used for fungi that grows on animal dung

Options:

A. Fungicolous

B. Coprophilous

C. Lignicolous

D. Keratinophilic

Answer: Coprophilous

663.

Question: Select the incorrect statement in reference to bryophytes :

Options:

A. Bryophytes are amphibians of plant kingdom.

B. The independent plant body of bryophytes is the sporophytic generation.

C. They are non-vascular plants.

D. They reproduce via spores.

Answer: The independent plant body of bryophytes is the sporophytic generation.

664.

Question: Enzyme responsible for nick translation on the lagging strand, during DNA replication, is:

Options:

A. DNA polymerase I

B. DNA polymerase III

C. Topoisomerase

D. Primosome complex

Answer: DNA polymerase I

665.

Question: Match the innate immune system cells in Column-I with their functions in Column-II and choose the correct answer using the codes given below :

Column I

(a) Eosinophils

(b) Neutrophill

(c) Mast Cells

(d) Cytokines

(e) Natural Killer cells

Column II

(i) Phagocytosis & Bacteriocidal action

(ii) Release of histamine & other substances

(iii) Lysis of infected cells

(iv) Killing parasites

(v) Messengers of immune system

Options:

A. (i) (iv) (v) (iii) (ii)

B. (iii) (v) (iv) (i) (ii)

C. (v) (i) (iv) (iii) (ii)

D. (ii) (iv) (iii) (i) (v)

Answer: (v) (i) (iv) (iii) (ii)

666.

Question: Assertion (A): The wood of Pinus provides commercially important timber.
Reason (R): The wood of Pinus.is manoxylic.

Options:

A. Both (A) and (R) are true and (R) is the correct explanation of (A).

B. Both (A) and (R) are true but (R) is not the correct explanation of (A).

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

Answer: (A) is true but (R) is false.

667.

Question: Fertilization is the process of

Options:

A. Transfer of the pollen from anther to stigma

B. Fusion of one male gamete with the egg

C. Formation of seed from ovule

D. Fusion of male nucleus with polar nuclei

Answer: Fusion of one male gamete with the egg

668.

Question: The secondary vascular bundles formed in the stem of Dracaena are

Options:

A. Amphivasal

B. Amphicribal

C. Conjoint Collateral Closed

D. Conjoint Collateral Open

Answer: Amphivasal

669.

Question: The osmotic parameter determining the flow of water from one cell to another is

Options:

A. Osmotic pressure

B. Diffusion Pressure Deficit

C. Turgor Pressure

D. Hydrostatic Pressure

Answer: Diffusion Pressure Deficit

670.

Question: Placement of Gymnosperms between Dicotyledons and Monocotyledons is one of the drawbacks in the system of classification of

Options:

A. Rendle

B. Engler and Prantl

C. Bentham and Hooker

D. Linnaeus

Answer: Bentham and Hooker

671.

Question: During aerobic respiration, all the ATP are synthesized as a result of

Options:

A. Oxidative phosphorylation

B. Oxidative and Substrate level phosphorylation

C. Substrate level phosphorylation

D. Oxidative and Photo-phosphorylation

Answer: Oxidative and Substrate level phosphorylation

672.

Question: Starch consist of

Options:

A. Unbranched amylose and amylopectin

B. Branched amylose and amylopectin

C. Unbranched amylose and branched amylopectin

D. Branched amylose and unbranched amylopectin

Answer: Unbranched amylose and branched amylopectin

673.

Question: Match the Hormones given in Column I with their role mentioned in Column II and select the correct answer using the codes given below :
Column I
(a) Gibberellin
(b) Auxin
(c) Cytokinin
(d) Abscisic Acid
(e) Ethylene
Column II
(i) Promotes bolting
(ii) Responsible for respiratory climactic
(iii) Plant growth inhibitor
(iv) Apical Dominance
(v) Cell division

Options:

A. (i) (iv) (v) (iii) (ii)

B. (iii) (v) (iv) (i) (ii)

C. (v) (i) (iv) (iii) (ii)

D. (ii) (iv) (iii) (i) (v)

Answer: (i) (iv) (v) (iii) (ii)

674.

Question: Consider the following processes :
(A) Photolysis of water
(B) Photophosphorylation
(C) Reduction of carbon dioxide
(D) Formation of $NADPH_2$
Which of these occur during light reaction of photosynthesis ?

Options:

A. Only (A) and (B)

B. Only (A), (B) and (C)

C. Only (A), (B) and (D)

D. (A), (B), (C) and (D)

Answer: Only (A), (B) and (D)

675.

Question: Number of cranial nerves in human is

Options:

A. 6 pairs

B. 12 pairs

C. 24 pairs

D. 20 pairs

Answer: 12 pairs

676.

Question: The sexual cycle of Plasmodium is completed in

Options:

A. Red Blood Corpuscles

B. The gut of mosquito

C. The salivary gland of mosquito

D. Liver tissue

Answer: The gut of mosquito

677.

Question: Which of the following pairs are correctly matched ?
A. Missense mutation - Substitution of one amino acid for another
B. Nonsense mutation - The altered DNA sequence is a stop codon
C. Frame shift mutation - The subsequent amino acids are altered
D. Silent mutation - There is no change in the DNA sequence

Options:

A. A, B and C

B. B, C and D

C. A, B and D

D. A, B, C and D

Answer: A, B and C

678.

Question: Choose the correct answer using the codes given below
Assumptions underlying Hardy-Weinberg equilibrium are
(A) Organisms are diploid.
(B) The population size is infinitely large.
(C) Mating is random.

Options:

A. (A) and (B)

B. (B) and (C)

C. (A) and (C)

D. (A), (B) and (C)

Answer: (A), (B) and (C)

679.

Question: The full form of the acronym IUCN is

Options:

A. International Conservation Union

B. International Union for Conservation of Nature

C. International Union for Conservation of Natural Resources

D. International Union for Conservation of Nature and Natural Resources

Answer: International Union for Conservation of Nature and Natural Resources

680.

Question: Consider the following criteria of classification in reference to the five Kingdom classification and choose the correct criteria, using the codes given below:
(A) Cell type
(B) Level of organisation
(C) Mode of reproduction
(D) Mode of nutrition

Options:

A. Only (A), (B) and (C)

B. Only (B), (C) and (D)

C. (A), (B), (C) and (D).

D. Only (A), (C) and (D)

Answer: (A), (B), (C) and (D).

681.

Question: The testtube baby means

Options:

A. Fertilization and development both in uterus

B. Fertilization in vitro and then transplantation in uterus

C. Embryo development is in vitro

D. Sperms and eggs developed in vitro prior to in vivo fertilization and development

Answer: Fertilization in vitro and then transplantation in uterus

682.

Question: Production of androgenic haploids using tissue culture technique was reported for the first time in

Options:

A. Carrot

B. Solanum

C. Datura

D. Capsicum

Answer: Datura

683.

Question: Arrange the cloning vectors given below in terms of increasing cloning capacity:
A. BAC
B. Phage
C. YAC
D. Plasmid
E. Cosmid

Options:

A. DEBCA

B. BDEAC

C. DBEAC

D. CAEBD

Answer: DBEAC

684.

Question: Which of the following component is not included in RCEM system of classification for objectives?

Options:

A. Understanding

B. Application

C. Creativity

D. Skill

Answer: Skill

685.

Question: Which of the following statement does not directly related with the follow up of a field trip ?

Options:

A. To develop programmed learning material by the students

B. Students' work should be analyzed

C. Collected material should be exhibited

D. Get report from students

Answer: To develop programmed learning material by the students

686.

Question: Which of the following component does not fall under Affective Domain ?

Options:

A. Receiving

B. Responding

C. Naturalization

D. Characterization

Answer: Naturalization

687.

Question: The collected animals in science laboratory are preserved by which of the following chemical?

Options:

A. Amino acid

B. Kerosene

C. Castor Oil

D. Formalin

Answer: Formalin

688.

Question: Match the following:
List-I
(a) Project Method
(b) Linear Programmed Instruction
(c) Branching Programmed Instruction
(d) Heuristic Method
List-II
(i) H.E. Armstrong
(ii) B.F. Skinner
(iii) William H. Kilpatrick
(iv) Norman A. Crowder

Options:

A. (ii) (iii) (iv) (i)

B. (ii) (iv) (i) (iii)

C. (iii) (ii) (iv) (i)

D. (iv) (i) (iii) (ii)

Answer: (iii) (ii) (iv) (i)

689.

Question: The classification of educational objectives related to Affective domain was given by :

Options:

A. Dewey

B. Krathwohl et-al

C. Gilford

D. Simpson

Answer: Krathwohl et-al

690.

Question: Which one of the following is the last category of psycho-motor domain of educational objectives if arrange from lowest to highest level ?

Options:

A. Naturalization

B. Co-ordination

C. Habit formation

D. Control

Answer: Naturalization

691.

Question: Which of the following is not a child centered method of teaching?

Options:

A. Demonstration method

B. Project method

C. Problem solving method

D. Laboratory method

Answer: Demonstration method

692.

Question: In continuous and comprehensive evaluation 'Comprehensive' means:

Options:

A. Evaluation of all teaching subjects

B. Complete evaluation of cognitive domain

C. Curriculum evaluation

D. Assessment of allround development of the child personality includes scholastic as well as co-scholastic aspects of the pupils' growth.

Answer: Assessment of allround development of the child personality includes scholastic as well as co-scholastic aspects of the pupils' growth.

693.

Question: "A project is a whole-hearted purposeful activity proceeding in a social environment." Who gave the above mentioned definition of project ?

Options:

A. Ballard

B. Kilpatrick

C. Dewey

D. Thorndike

Answer: Kilpatrick

694.

Question: Which of the following is not a step of Herbertian five steps system of lesson planning ?

Options:

A. Preparation

B. Presentation

C. Specification

D. Comparison and Association

Answer: Specification

695.

Question: Which of the following is not a criteria of a good test ?

Options:

A. Reliability

B. Validity

C. Subjectivity

D. Objectivity

Answer: Subjectivity

696.

Question: 'Nature of Science' can be best explained in the form of

Options:

A. Product and process

B. Product only

C. Process only

D. Neither Product Nor Process

Answer: Product and process

697.

Question: Which of the following is not a guiding principle of recommended in NCF-2005 report ?

Options:

A. Connecting knowledge to life outside the school

B. Ensuring that learning is free from rote methods.

C. Enriching the curriculum to provide for overall development of children rather than remain textbook centric.

D. Comparing international curricula.

Answer: Comparing international curricula.

698.

Question: "Science is not merely looking at the test tubes and mixing this and that to produce something big or small, rather to train our mind according to the scientific methods is science." Who stated this statement ?

Options:

A. Dr. S. Radhakrishnan

B. Dr. S.S. Bhatnagar

C. Pt. Jawaharlal Nehru

D. Dr. Rajendra Prasad

Answer: Pt. Jawaharlal Nehru

699.

Question: Arrange the following steps of Unit Plan in the correct sequential order :
(a) Learning activities
(b) Testing procedures
(c) Objectives with specifications
(d) Content analysis

Options:

A. a → b → c → d

B. d → c → a → b

C. c → d → b → a

D. b → a → d → c

Answer: d → c → a → b

700.

Question: How many National focus groups position papers were set up in NCF-2005?

Options:

A. 20

B. 21

C. 22

D. 23

Answer: 21

701.

Question: Which of the following is not a technique to measure the qualitative changes in a child ?

Options:

A. Assignment

B. Questionnaire

C. Inventory

D. Observation

Answer: Assignment

702.

Question: Match the following :
List-I
(a) Summative Evaluation
(b) Diagnostic testing
(c) Remedial Teaching
(d) Formative Evaluation
List-II
(i) Formulating a suitable plan of action for weak learners
(ii) Monitoring Progress
(iii) To determine the achievement of objectives
(iv) Identifying learning difficulties

Options:

A. (ii) (i) (iv) (iii)

B. (iii) (iv) (i) (ii)

C. (iv) (iii) (i) (ii)

D. (iii) (ii) (iv) (i)

Answer: (iii) (iv) (i) (ii)

703.

Question: In context of multisensory teaching aids, the magnetic board is used for

Options:

A. Separating objects

B. Conducting any experiments

C. Display visual-aids backed with magnetic material

D. Making the class beautiful

Answer: Display visual-aids backed with magnetic material

704.

Question: The displacement x of a body varies with time as $x = (1/3)t^2 + 16t + 3$, where x is in metres and t is in seconds. The time taken by the body to come to rest is

Options:

A. 36 s

B. 30 s

C. 24 s

D. 12 s

Answer: 24 s

705.

Question: For a projectile, the maximum height reached H and the time of flight T are related as $H = nT^2$. The value of n is (Take $g = 10$ m/s²)

Options:

A. 5/4

B. 5/2

C. 5

D. 10

Answer: 5/4

706.

Question: If $|A \times B| = \sqrt{3} \, A \cdot B$, then the value of $|A + B|$ is

Options:

A. $(A^2 + B^2 + AB/\sqrt{3})^{(1/2)}$

B. $A+B$

C. $(A^2 + B^2 + \sqrt{3} \, AB)^{(1/2)}$

D. $(A^2 + B^2 + AB)^{(1/2)}$

Answer: $(A^2 + B^2 + AB)^{(1/2)}$

707.

Question: A block of mass 10 kg is kept on a horizontal surface. A force F is applied on the block as shown in figure. For which minimum value of F, the block will be lifted up ?

Options:

A. 50 N

B. 100 N

C. 200 N

D. 250 N

Answer: 100 N

708.

Question: A rectangular plate has length (4±0.04) cm and width (2±0.02) cm. The maximum percentage error in the measurement of its area is

Options:

A. 12%

B. 6%

C. 2%

D. 4%

Answer: 2%

709.

Question: A body is acted upon by a variable force F = (3 + 0.5 x) N. The work done in moving the body from x = 0 to x = 4 m is

Options:

A. 16 J

B. 32 J

C. 8 J

D. 24 J

Answer: 16 J

710.

Question: The maximum height attained by a Rocket fired from the surface of earth (radius R) with speed equal to 50% of escape velocity from the surface of earth is

Options:

A. R/2

B. 16R/9

C. R/8

D. R/3

Answer: R/3

711.

Question: The mass of a solid sphere is equal to the mass of a spherical shell. Their moments of inertia about diametric axes are also equal. The ratio of their radius is

Options:

A. 5:3

B. 3:5

C. √5:√3

D. 1:1

Answer: √5:√3

712.

Question: A block of mass m resting on a rough horizontal table (co-efficient of friction=μ) is pulled by a force F as shown in figure. The acceleration of block moving horizontally is

Options:

A. $F\cos\theta/m$

B. $(F/m)\cos\theta - \mu g$

C. $(F/m)(\cos\theta + \mu \sin\theta) - \mu g$

D. $(F/m)(\cos\theta - \mu \sin\theta) - \mu g$

Answer: $(F/m)(\cos\theta + \mu \sin\theta) - \mu g$

713.

Question: The upper end of a wire is rigidly clamped. By applying a force F its length is elongated by l. The work done in this elongation is

Options:

A. Fl

B. 2 Fl

C. F/2l

D. Fl/2

Answer: Fl/2

714.

Question: The dimension of surface tension is -

Options:

A. $[M^1 L^1 T^{-2}]$

B. $[M^1 L^0 T^{-2}]$

C. $[M^1 L^1 T^{-1}]$

D. $[M^1 L^2 T^{-2}]$

Answer: $[M^1 L^0 T^{-2}]$

715.

Question: A spherical ball of radius r, is falling in a liquid of viscosity η, with a velocity v, then retarding viscous force acting on the spherical ball is

Options:

A. inversely proportional to both r and v

B. directly proportional to r but inversely proportional to v

C. inversely proportional to r but directly proportional to v

D. directly proportional to both r and v

Answer: directly proportional to both r and v

716.

Question: A 40 W heat source is applied to a gas sample for 25 sec. during which time the gas expands and does 750 J of work on its surroundings. The change in the internal energy of the gas is

Options:

A. 1250 J

B. 250 J

C. 1750 J

D. 150 J

Answer: 250 J

717.

Question: The differential equation of simple harmonic motion of a particle is given by $ad^2x/dt^2 + bx = 0$, where a and b are constants. The ratio of the magnitude of the maximum speed to the maximum acceleration of the particle is

Options:

A. $\sqrt{(b/a)}$

B. a/b

C. $\sqrt{(a/b)}$

D. b/a

Answer: $\sqrt{(a/b)}$

718.

Question: A copper disc with a central hole is heated. The diameter of the hole

Options:

A. remains unchanged

B. first decreases and then increases

C. decreases

D. increases

Answer: increases

719.

Question: A body cools down from 50 °C to 45 °C in 5 minutes and then from 45 °C to 40 °C in another 8 minutes. The temperature of the surroundings is approximately

Options:

A. 34 °C

B. 17 °C

C. 68 °C

D. 27 °C

Answer: 34 °C

720.

Question: A transverse travelling sinusoidal wave on a string has a frequency of 100 Hz, wavelength of 0.040 m and an amplitude of 2.0 mm. The maximum velocity in m/s of any point on the string is approximately

Options:

A. 0.24

B. 1.26

C. 4

D. 15

Answer: 1.26

721.

Question: If a lens of glass of refractive index 3/2 has a focal length fa in air. Lens is shifted from air to water ($\mu = 4/3$), then focal length of lens in water becomes fw. The relation between fa and fw is -

Options:

A. fw = 2fa

B. fw = fa/2

C. fw = fa/4

D. fw = 4fa

Answer: fw = 4fa

722.

Question: An ideal gas follows a process described by $PV^2 = C$ (C is a constant) from (P_1, V_1, T_1) to (P_2, V_2, T_2). Then

Options:

A. If $P_1 > P_2$ then $T_2 > T_1$

B. If $V_2 > V_1$ then $T_2 < T_1$

C. If $V_2 > V_1$ then $T_2 > T_1$

D. If $P_1 > P_2$ then $V_1 > V_2$

Answer: If $V_2 > V_1$ then $T_2 < T_1$

723.

Question: A 10 μF capacitor is charged to a potential difference of 50 V and is connected to another uncharged capacitor in parallel. Now, the common potential difference becomes 20 V. The capacitance of second capacitor is

Options:

A. 10 μF

B. 20 μF

C. 30 μF

D. 15 μF

Answer: 15 μF

724.

Question: In the circuit shown, bulb B rated as 1.5 V, 0.45 W. If the bulb glows with full intensity so that what will be the equivalent resistance between X and Y ?

Options:

A. 0.45 Ω

B. 1 Ω

C. 3 Ω

D. 5 Ω

Answer: 5 Ω

725.

Question: A long solenoid has 200 turns per centimeter and carries a current of 2.5 A. The magnetic field at its centre is ($\mu_0 = 4\pi \times 10^{-7}$ Wb/(m-Amp))

Options:

A. 3.14×10^{-2} Wb/m²

B. 6.28×10^{-2} Wb/m²

C. 9.42×10^{-2} Wb/m²

D. 12.56×10^{-2} Wb/m²

Answer: 6.28×10^{-2} Wb/m²

726.

Question: Two conducting spheres are far apart. The smaller sphere carries a total charge Q. The larger sphere has a radius that is twice that of smaller and is neutral. After the two spheres are connected by a conducting wire the charge an the smaller and larger spheres, respectively, are

Options:

A. Q/2 and Q/2

B. Q/3 and 2Q/3

C. Q/4 and 3Q/4

D. Zero and Q

Answer: Q/3 and 2Q/3

727.

Question: At resonance in LCR circuit in ac, which of the following statement is correct?

Options:

A. Power factor of the circuit is 1 and maximum power is dissipated in circuit through R.

B. Power factor of the circuit is 1 and minimum power is dissipated in circuit through R.

C. Power factor of the circuit is 0 and maximum power is dissipated in circuit through R.

D. Power factor of the circuit is 0 and minimum power is dissipated in circuit through R.

Answer: Power factor of the circuit is 1 and maximum power is dissipated in circuit through R.

728.

Question: Two identical metal plates are separately irradiated with two different photons of energies 1.0 eV and 2.5 eV respectively. The work function of metal surface is 0.5 eV. The ratio of maximum kinetic energies of electrons emitted from the two surface is

Options:

A. 1:2

B. 1:4

C. 2:3

D. 1:2.5

Answer: 1:4

729.

Question: The ratio of radii of $^{27}_{13}Al$ nucleus and $^{125}_{52}Te$ nucleus is approximately

Options:

A. 3:5

B. 13:52

C. 40:177

D. 14:73

Answer: 3:5

730.

Question: Using above codes, which of the following are equivalent to Henry (S.I. unit of Inductance) ?
(a) weber / amp
(b) volt X sec / amp
(c) tesla X metre² / amp
(d) ohm X sec

Options:

A. All (a), (b), (c) and (d) are correct.

B. Only (a) and (b) are correct.

C. Only (a) and (c) are correct.

D. Only (a), (b) and (c) are correct.

Answer: All (a), (b), (c) and (d) are correct.

731.

Question: A carrier wave of Peak voltage 12 V is used to transmit a message signal. Then the peak voltage of the modulating signal in order to have a modulation index of 75% will be

Options:

A. 6 V

B. 9 V

C. 12 V

D. 16 V

E. ---

F. Question: For the two particle system shown in figure, the magnitude of the net angular momentum of the system about origin is

G. Options:

H. 42 kg m²/s

I. 54 kg m²/s

J. 48 kg m²/s

K. 6 kg m²/s

L. ---

M. Question: The quality factor of an oscillator whose amplitude decreases to half its initial value in every 100 oscillation, is

N. Options:

O. 50 π / In 2

P. 100 π / In 2

Q. 51 π / In 2

R. 101 π / In 2

S. ---

T. Question: Two coherent sources of light S_1 and S_2 of wavelength λ emitting in phase are placed respectively at origin and at (0, 3λ). A detector of light is to be moved along positive x-axis from origin. The location of the first order maxima obtained on the x-axis due to interference of light is at

U. Options:

V. x = 1.25 λ

W. x = 4 λ

X. x = λ

Y. x = λ/2

Z. ---

[. ---

\. Question: The heat capacity in Debye (θD) approximation at low temperatures of one dimensional

monoatomic lattice is proportional to (θD is Debye temperature)

]. Options:

^. $T^2/\theta D$

_. $T^3/\theta D$

`. $(T/\theta D)^3$

a. $T^4/\theta D^3$

b. ---

c. Question: A uniform rope of mass m and length L hangs from a ceiling. The speed of transverse waves in the rope at a point at a distance x from the lower end of the rope is

d. Options:

e. $\sqrt{2gx}$

f. $\sqrt{(gx/2)}$

g. $2\sqrt{gx}$

h. $\sqrt{gx}$

i. ---

j. Question: An electric motor operated at 100 V is used to lift a 10 kg mass to a height of 10 m. It completes the job in 5 s and withdraws 3 A current from the source. Heat produced (in joule) in motor will be {assume no other losses to be present, g = 10 m/s2}

k. Options:

l. 100

m. 200

n. 300

o. 500

p. ---

q. Question: The diameter of ^{4}He atom is 1Å. One mol of the gas occupies 20 litres at 20 K. The mean free path of the molecules will be, nearly {Given R = 8.4 J mol^{-1} K^{-1} and Avogadro number N_A = 6 x 10^{23} mol^{-1}}

r. Options:

s. 7.5 x 10^{-7} m

t. 3.25 x 10^{-7} m

Answer: 9 V

732.

Question: An example of "an algal colony consisting of definite number of cells in a specific arrangement" is :

Options:

A. Nostoc

B. Ulothrix

C. Volvox

D. Polysiphonia

Answer: Volvox

733.

Question: The technical term used for fungi that grows on animal dung

Options:

A. Fungicolous

B. Coprophilous

C. Lignicolous

D. Keratinophilic

Answer: Coprophilous

734.

Question: Select the incorrect statement in reference to bryophytes :

Options:

A. Bryophytes are amphibians of plant kingdom.

B. The independent plant body of bryophytes is the sporophytic generation.

C. They are non-vascular plants.

D. They reproduce via spores.

Answer: The independent plant body of bryophytes is the sporophytic generation.

735.

Question: Enzyme responsible for nick translation on the lagging strand, during DNA replication, is:

Options:

A. DNA polymerase I

B. DNA polymerase III

C. Topoisomerase

D. Primosome complex

Answer: DNA polymerase I

736.

Question: Match the innate immune system cells in Column-I with their functions in Column-II and choose the correct answer using the codes given below :
Column I
(a) Eosinophils
(b) Neutrophill
(c) Mast Cells
(d) Cytokines
(e) Natural Killer cells

Column II
(i) Phagocytosis & Bacteriocidal action
(ii) Release of histamine & other substances
(iii) Lysis of infected cells
(iv) Killing parasites
(v) Messengers of immune system

Options:

A. (i) (iv) (v) (iii) (ii)

B. (iii) (v) (iv) (i) (ii)

C. (v) (i) (iv) (iii) (ii)

D. (ii) (iv) (iii) (i) (v)

Answer: (v) (i) (iv) (iii) (ii)

737.

Question: Consider the Assertion (A) and Reason (R) and choose the correct answer using the codes given below.
Assertion (A): The wood of Pinus provides commercially important timber.
Reason (R): The wood of Pinus is manoxylic.

Options:

A. Both (A) and (R) are true and (R) is the correct explanation of (A).

B. Both (A) and (R) are true but (R) is not the correct explanation of (A).

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

Answer: (A) is true but (R) is false.

738.

Question: Fertilization is the process of

Options:

A. Transfer of the pollen from anther to stigma

B. Fusion of one male gamete with the egg

C. Formation of seed from ovule

D. Fusion of male nucleus with polar nuclei

Answer: Fusion of one male gamete with the egg

739.

Question: The secondary vascular bundles formed in the stem of Dracaena are

Options:

A. Amphivasal

B. Amphicribal

C. Conjoint Collateral Closed

D. Conjoint Collateral Open

Answer: Amphivasal

740.

Question: The osmotic parameter determining the flow of water from one cell to another is

Options:

A. Osmotic pressure

B. Diffusion Pressure Deficit

C. Turgor Pressure

D. Hydrostatic Pressure

Answer: Diffusion Pressure Deficit

741.

Question: Placement of Gymnosperms between Dicotyledons and Monocotyledons is one of the drawbacks in the system of classification of

Options:

A. Rendle

B. Engler and Prantl

C. Bentham and Hooker

D. Linnaeus

Answer: Bentham and Hooker

742.

Question: During aerobic respiration, all the ATP are synthesized as a result of

Options:

A. Oxidative phosphorylation

B. Oxidative and Substrate level phosphorylation

C. Substrate level phosphorylation

D. Oxidative and Photo-phosphorylation

Answer: Oxidative and Substrate level phosphorylation

743.

Question: Starch consist of

Options:

A. Unbranched amylose and amylopectin

B. Branched amylose and amylopectin

C. Unbranched amylose and branched amylopectin

D. Branched amylose and unbranched amylopectin

Answer: Unbranched amylose and branched amylopectin

D. 20 pairs

Answer: 12 pairs

744.

Question: Match the Hormones given in Column I with their role mentioned in Column II and select the correct answer using the codes given below :
Column I
(a) Gibberellin
(b) Auxin
(c) Cytokinin
(d) Abscisic Acid
(e) Ethylene
Column II
(i) Promotes bolting
(ii) Responsible for respiratory climactic
(iii) Plant growth inhibitor
(iv) Apical Dominance
(v) Cell division

Options:

A. (i) (iv) (v) (iii) (ii)

B. (iii) (v) (iv) (i) (ii)

C. (v) (i) (iv) (iii) (ii)

D. (ii) (iv) (iii) (i) (v)

Answer: (i) (iv) (v) (iii) (ii)

745.

Question: Consider the following processes :
(A) Photolysis of water
(B) Photophosphorylation
(C) Reduction of carbon dioxide
(D) Formation of NADPH₂
Which of these occur during light reaction of photosynthesis ?

Options:

A. Only (A) and (B)

B. Only (A), (B) and (C)

C. Only (A), (B) and (D)

D. (A), (B), (C) and (D)

Answer: Only (A), (B) and (D)

746.

Question: Number of cranial nerves in human is

Options:

A. 6 pairs

B. 12 pairs

C. 24 pairs

747.

Question: The sexual cycle of Plasmodium is completed in

Options:

A. Red Blood Corpuscles

B. The gut of mosquito

C. The salivary gland of mosquito

D. Liver tissue

Answer: The gut of mosquito

748.

Question: Which of the following pairs are correctly matched ?
A. Missense mutation - Substitution of one amino acid for another
B. Nonsense mutation - The altered DNA sequence is a stop codon
C. Frame shift mutation - The subsequent amino acids are altered
D. Silent mutation - There is no change in the DNA sequence

Options:

A. A, B and C

B. B, C and D

C. A, B and D

D. A, B, C and D

Answer: A, B and C

749.

Question: Choose the correct answer using the codes given below
Assumptions underlying Hardy-Weinberg equilibrium are
(A) Organisms are diploid.
(B) The population size is infinitely large.
(C) Mating is random.

Options:

A. (A) and (B)

B. (B) and (C)

C. (A) and (C)

D. (A), (B) and (C)

Answer: (A), (B) and (C)

750.

Question: The full form of the acronym IUCN is

Options:

A. International Conservation Union

B. International Union for Conservation of Nature

C. International Union for Conservation of Natural Resources

D. International Union for Conservation of Nature and Natural Resources

Answer: International Union for Conservation of Nature and Natural Resources

751.

Question: Consider the following criteria of classification in reference to the five Kingdom classification and choose the correct criteria, using the codes given below:
(A) Cell type
(B) Level of organisation
(C) Mode of reproduction
(D) Mode of nutrition

Options:

A. Only (A), (B) and (C)

B. Only (B), (C) and (D)

C. (A), (B), (C) and (D).

D. Only (A), (C) and (D)

Answer: (A), (B), (C) and (D).

752.

Question: The testtube baby means

Options:

A. Fertilization and development both in uterus

B. Fertilization in vitro and then transplantation in uterus

C. Embryo development is in vitro

D. Sperms and eggs developed in vitro prior to in vivo fertilization and development

Answer: Fertilization in vitro and then transplantation in uterus

753.

Question: Production of androgenic haploids using tissue culture technique was reported for the first time in

Options:

A. Carrot

B. Solanum

C. Datura

D. Capsicum

Answer: Datura

754.

Question: Arrange the cloning vectors given below in terms of increasing cloning capacity:
A. BAC
B. Phage
C. YAC
D. Plasmid
E. Cosmid

Options:

A. DEBCA

B. BDEAC

C. DBEAC

D. CAEBD

Answer: DBEAC

755.

Question: Which of the following component is not included in RCEM system of classification for objectives?

Options:

A. Understanding

B. Application

C. Creativity

D. Skill

Answer: Creativity

756.

Question: Which of the following statement does not directly related with the follow up of a field trip ?

Options:

A. To develop programmed learning material by the students

B. Students' work should be analyzed

C. Collected material should be exhibited

D. Get report from students

Answer: To develop programmed learning material by the students

757.

Question: Which of the following component does not fall under Affective Domain ?

Options:

A. Receiving

B. Responding

C. Naturalization

D. Characterization

Answer: Naturalization

758.

Question: The collected animals in science laboratory are preserved by which of the following chemical?

Options:

A. Amino acid

B. Kerosene

C. Castor Oil

D. Formalin

Answer: Formalin

759.

Question: Match the following:
List-I
(a) Project Method
(b) Linear Programmed Instruction
(c) Branching Programmed Instruction
(d) Heuristic Method
List-II
(i) H.E. Armstrong
(ii) B.F. Skinner
(iii) William H. Kilpatrick
(iv) Norman A. Crowder

Options:

A. (ii) (iii) (iv) (i)

B. (ii) (iv) (i) (iii)

C. (iii) (ii) (iv) (i)

D. (iv) (i) (iii) (ii)

Answer: (iii) (ii) (iv) (i)

760.

Question: The classification of educational objectives related to Affective domain was given by :

Options:

A. Dewey

B. Krathwohl et-al

C. Gilford

D. Simpson

Answer: Krathwohl et-al

761.

Question: Which one of the following is the last category of psycho-motor domain of educational objectives if arrange from lowest to highest level ?

Options:

A. Naturalization

B. Co-ordination

C. Habit formation

D. Control

Answer: Naturalization

762.

Question: Which of the following is not a child centered method of teaching?

Options:

A. Demonstration method

B. Project method

C. Problem solving method

D. Laboratory method

Answer: Demonstration method

763.

Question: In continuous and comprehensive evaluation 'Comprehensive' means:

Options:

A. Evaluation of all teaching subjects

B. Complete evaluation of cognitive domain

C. Curriculum evaluation

D. Assessment of allround development of the child personality includes scholastic as well as co-scholastic aspects of the pupils' growth.

Answer: Assessment of allround development of the child personality includes scholastic as well as co-scholastic aspects of the pupils' growth.

764.

Question: "A project is a whole-hearted purposeful activity proceeding in a social environment." Who gave the above mentioned definition of project ?

Options:

A. Ballard

B. Kilpatrick

C. Dewey

D. Thorndike

Answer: Kilpatrick

765.

Question: Which of the following is not a step of Herbertian five steps system of lesson planning ?

Options:

A. Preparation

B. Presentation

C. Specification

D. Comparison and Association

Answer: Specification

766.

Question: Which of the following is not a criteria of a good test ?

Options:

A. Reliability

B. Validity

C. Subjectivity

D. Objectivity

Answer: Subjectivity

767.

Question: 'Nature of Science' can be best explained in the form of

Options:

A. Product and process

B. Product only

C. Process only

D. Neither Product Nor Process

Answer: Product and process

768.

Question: Which of the following is not a guiding principle of recommended in NCF-2005 report ?

Options:

A. Connecting knowledge to life outside the school

B. Ensuring that learning is free from rote methods.

C. Enriching the curriculum to provide for overall development of children rather than remain textbook centric.

D. Comparing international curricula.

Answer: Comparing international curricula.

769.

Question: "Science is not merely looking at the test tubes and mixing this and that to produce something big or small, rather to train our mind according to the scientific methods is science." Who stated this statement ?

Options:

A. Dr. S. Radhakrishnan

B. Dr. S.S. Bhatnagar

C. Pt. Jawaharlal Nehru

D. Dr. Rajendra Prasad

Answer: Pt. Jawaharlal Nehru

770.

Question: Arrange the following steps of Unit Plan in the correct sequential order :
(a) Learning activities
(b) Testing procedures
(c) Objectives with specifications
(d) Content analysis

Options:

A. a → b → c → d

B. d → c → a → b

C. c → d → b → a

D. b → a → d → c

Answer: d → c → a → b

771.

Question: How many National focus groups position papers were set up in NCF-2005?

Options:

A. 20

B. 21

C. 22

D. 23

Answer: 21

772.

Question: Which of the following is not a technique to measure the qualitative changes in a child ?

Options:

A. Assignment

B. Questionnaire

C. Inventory

D. Observation

Answer: Assignment

773.

Question: Match the following :
List-I
(a) Summative Evaluation
(b) Diagnostic testing
(c) Remedial Teaching
(d) Formative Evaluation
List-II
(i) Formulating a suitable plan of action for weak learners
(ii) Monitoring Progress
(iii) To determine the achievement of objectives
(iv) Identifying learning difficulties

Options:

A. (ii) (i) (iv) (iii)

B. (iii) (iv) (i) (ii)

C. (iv) (iii) (i) (ii)

D. (iii) (ii) (iv) (i)

Answer: (iii) (iv) (i) (ii)

774.

Question: In context of multisensory teaching aids, the magnetic board is used for

Options:

A. Separating objects

B. Conducting any experiments

C. Display visual-aids backed with magnetic material

D. Making the class beautiful

Answer: Display visual-aids backed with magnetic material

775.

Question: The displacement x of a body varies with time as $x = (1/3)t^2 + 16t + 3$, where x is in metres and t is in seconds. The time taken by the body to come to rest is

Options:

A. 36 s

B. 30 s

C. 24 s

D. 12 s

Answer: 24 s

776.

Question: For a projectile, the maximum height reached H and the time of flight T are related as $H = nT^2$. The value of n is (Take $g = 10$ m/s²)

Options:

A. 5/4

B. 5/2

C. 5

D. 10

Answer: 5/4

777.

Question: If $| A \times B | = \sqrt{3} \, A \cdot B$, then the value of $| A + B |$ is

Options:

A. $(A^2+B^2 + AB/\sqrt{3})^{(1/2)}$

B. $A+B$

C. $(A^2 + B^2 + \sqrt{3} \, AB)^{(1/2)}$

D. $(A^2 + B^2 + AB)^{(1/2)}$

Answer: $(A^2 + B^2 + AB)^{(1/2)}$

778.

Question: A block of mass 10 kg is kept on a horizontal surface. A force F is applied on the block as shown in figure. For which minimum value of F, the block will be lifted up ?

Options:

A. 50 N

B. 100 N

C. 200 N

D. 250 N

Answer: 200 N

779.

Question: A rectangular plate has length (4±0.04) cm and width (2±0.02) cm. The maximum percentage error in the measurement of its area is

Options:

A. 12%

B. 6%

C. 2%

D. 4%

Answer: 2%

780.

Question: A body is acted upon by a variable force F = (3 + 0.5 x) N. The work done in moving the body from x = 0 to x = 4 m is

Options:

A. 16 J

B. 32 J

C. 8 J

D. 24 J

Answer: 16 J

781.

Question: The maximum height attained by a Rocket fired from the surface of earth (radius R) with speed equal to 50% of escape velocity from the surface of earth is

Options:

A. R/2

B. 16R/9

C. R/8

D. R/3

Answer: R/3

782.

Question: The mass of a solid sphere is equal to the mass of a spherical shell. Their moments of inertia about diametric axes are also equal. The ratio of their radius is

Options:

A. 5:3

B. 3:5

C. √5:√3

D. 4:1

Answer: √5:√3

783.

Question: A block of mass m resting on a rough horizontal table (co-efficient of friction=μ) is pulled by a force F as shown in figure. The acceleration of block moving horizontally is

Options:

A. Fcosθ/m

B. F/m cosθ - μg

C. F/m (cosθ + μ sinθ) - μg

D. F/m (cosθ - μ sinθ) - μg

Answer: F/m (cosθ + μ sinθ) - μg

784.

Question: The upper end of a wire is rigidly clamped. By applying a force F its length is elongated by l. The work done in this elongation is

Options:

A. Fl

B. 2 Fl

C. F/2l

D. Fl/2

Answer: Fl/2

785.

Question: The dimension of surface tension is -

Options:

A. $[M^1 L^1 T^{-2}]$

B. $[M^1 L^0 T^{-2}]$

C. $[M^1 L^1 T^{-1}]$

D. $[M^1 L^2 T^{-2}]$

Answer: $[M^1 L^0 T^{-2}]$

786.

Question: A spherical ball of radius r, is falling in a liquid of viscosity η, with a velocity v, then retarding viscous force acting on the spherical ball is

Options:

A. inversely proportional to both r and v

B. directly proportional to r but inversely proportional to v

C. inversely proportional to r but directly proportional to v

D. directly proportional to both r and v

Answer: directly proportional to both r and v

787.

Question: A 40 W heat source is applied to a gas sample for 25 sec. during which time the gas expands and does 750 J of work on its surroundings. The change in the internal energy of the gas is

Options:

A. 1250 J

B. 250 J

C. 1750 J

D. 150 J

Answer: 250 J

788.

Question: The differential equation of simple harmonic motion of a particle is given by $ad^2x/dt^2 + bx = 0$, where a and b are constants. The ratio of the magnitude of the maximum speed to the maximum acceleration of the particle is

Options:

A. b/a

B. a/b

C. $\sqrt{(b/a)}$

D. $\sqrt{(a/b)}$

Answer: $\sqrt{(a/b)}$

789.

Question: A copper disc with a central hole is heated. The diameter of the hole

Options:

A. remains unchanged

B. first decreases and then increases

C. decreases

D. increases

Answer: increases

790.

Question: A body cools down from 50 °C to 45 °C in 5 minutes and then from 45 °C to 40 °C in another 8 minutes. The temperature of the surroundings is approximately

Options:

A. 34 °C

B. 17 °C

C. 68 °C

D. 27 °C

Answer: 34 °C

791.

Question: A transverse travelling sinusoidal wave on a string has a frequency of 100 Hz, wavelength of 0.040 m and an amplitude of 2.0 mm. The maximum velocity in m/s of any point on the string is approximately

Options:

A. 0.24

B. 1.26

C. 4

D. 15

Answer: 1.26

792.

Question: If a lens of glass of refractive index (3/2) has a focal length f_a in air. Lens is shifted from air to water (μ = 4/3), then focal length of lens in water becomes f_w. The relation between f_a and f_w is -

Options:

A. f_w = $2f_a$

B. f_w = $f_a/2$

C. f_w = $f_a/4$

D. f_w = $4f_a$

Answer: f_w = $4f_a$

793.

Question: An ideal gas follows a process described by $PV^2 = C$ (C is a constant) from (P_1, V_1, T_1) to (P_2, V_2, T_2). Then

Options:

A. If $P_1 > P_2$ then $T_2 > T_1$

B. If $V_2 > V_1$ then $T_2 < T_1$

C. If $V_2 > V_1$ then $T_2 > T_1$

D. If $P_1 > P_2$ then $V_1 > V_2$

Answer: If $V_2 > V_1$ then $T_2 < T_1$

794.

Question: A 10 μF capacitor is charged to a potential difference of 50 V and is connected to another uncharged capacitor in parallel. Now, the common potential difference becomes 20 V. The capacitance of second capacitor is

Options:

A. 10 μF

B. 20 μF

C. 30 μF

D. 15 μF

Answer: 15 μF

795.

Question: In the circuit shown, bulb B rated as 1.5 V, 0.45 W. If the bulb glows with full intensity so that what will be the equivalent resistance between X and Y ?

Options:

A. 0.45 Ω

B. 1 Ω

C. 3 Ω

D. 5 Ω

Answer: 5 Ω

796.

Question: A long solenoid has 200 turns per centimeter and carries a current of 2.5 A. The magnetic field at its centre is ($\mu_0 = 4\pi \times 10^{-7}$ Wb/(m-Amp))

Options:

A. 3.14×10^{-2} Wb/m²

B. 6.28×10^{-2} Wb/m²

C. 9.42×10^{-2} Wb/m²

D. 12.56×10^{-2} Wb/m²

Answer: 6.28×10^{-2} Wb/m²

797.

Question: Two conducting spheres are far apart. The smaller sphere carries a total charge Q. The larger sphere has a radius that is twice that of smaller and is neutral. After the two spheres are connected by a conducting wire the charge an the smaller and larger spheres, respectively, are

Options:

A. Q/2 and Q/2

B. Q/3 and 2Q/3

C. Q/4 and 3Q/4

D. Zero and Q

Answer: Q/3 and 2Q/3

798.

Question: At resonance in LCR circuit in ac, which of the following statement is correct?

Options:

A. Power factor of the circuit is 1 and maximum power is dissipated in circuit through R.

B. Power factor of the circuit is 1 and minimum power is dissipated in circuit through R.

C. Power factor of the circuit is 0 and maximum power is dissipated in circuit through R.

D. Power factor of the circuit is 0 and minimum power is dissipated in circuit through R.

Answer: Power factor of the circuit is 1 and maximum power is dissipated in circuit through R.

799.

Question: Two identical metal plates are separately irradiated with two different photons of energies 1.0 eV and 2.5 eV respectively. The work function of metal surface is 0.5 eV. The ratio of maximum kinetic energies of electrons emitted from the two surface is

Options:

A. 1:2

B. 1:4

C. 2:3

D. 1:2.5

Answer: 1:4

800.

Question: The ratio of radii of ^{13}Al nucleus and $^{125}_{52}$Te nucleus is approximately

Options:

A. 3:5

B. 13:52

C. 40:177

D. 14:73

Answer: 3:5

801.

Question: Using above codes, which of the following are equivalent to Henry (S.I. unit of Inductance) ?
(a) weber / amp
(b) volt X sec / amp
(c) tesla X metre² / amp
(d) ohm X sec

Options:

A. All (a), (b), (c) and (d) are correct.

B. Only (a) and (b) are correct.

C. Only (a) and (c) are correct.

D. Only (a), (b) and (c) are correct.

Answer: All (a), (b), (c) and (d) are correct.

802.

Question: the mineral which is essential for absorption and maintaining balance of body fluids is -

Options:

A. iron

B. calcuim

C. sodium

D. chlorine

Answer: sodium

803.

Question: Exoskeleton of Periplaneta is made up of -

Options:

A. calcium carbonate

B. cutin

C. chitin

D. mucous

Answer: chitin

804.

Question: the term " genetics" was given by -

Options:

A. mendel

B. morgan

C. bateson

D. boveri

Answer: bateson

805.

Question: the correct sequence of cell stages during spermatogenesis is-

Options:

A. spermatogonia --> spermatocytes --> spermatids--> spermatozoa

B. spermatogonia --> spermatids -->spermatocytes --> spermatozoa

C. spermatocytes --> spermatogonia --> spermatids--> spermatozoa

D. spermatocytes --> spermatids-->spermatogonia --> spermatozoa

Answer: spermatogonia --> spermatocytes --> spermatids--> spermatozoa

806.

Question: pseudocoelom is present in-

Options:

A. platyhelminthes

B. aschelminthes

C. annelida

D. coelenterata

Answer: aschelminthes

807.

Question: which cell organelle helps in the formation of acrosome ?

Options:

A. mitochondria

B. golgi complex

C. ribosomes

D. chloroplast

Answer: golgi complex

808.

Question: scurvy disease is due to the deficiency of-

Options:

A. vitamin a

B. vitamin d

C. vitamin b

D. vitamin c

Answer: vitamin c

809.

Question: father of phycology is -

Options:

A. f.e.fritsch

B. m.o.p. iyengar

C. m.s. randhawa

D. g.smith

Answer: f.e.fritsch

810.

Question: which of the following is not a tracheophyta ?

Options:

A. angiosperm

B. gymnosperm

C. pteridophyta

D. bryophyta

Answer: bryophyta

811.

Question: in which of the following feature does the angiosperms resemble with the gymnosperms ?

Options:

A. presence of ovary

B. presence of ovule

C. ploidy of endosperm

D. double fertilisation

Answer: presence of ovule

812.

Question: cremocarp type of fruit is present in -

Options:

A. nutmeg

B. fennel

C. clove

D. mace

Answer: fennel

813.

Question: the formation of embryo from egg cell without fertilisation is called as -

Options:

A. parthenocarpy

B. parthenogenesis

C. polyembryony

D. xenia

Answer: parthenogenesis

814.

Question: el nino happens because -

Options:

A. trade winds make the water cold

B. trade winds weakens which does not bring up cold water

C. trade winds strengthen which brings up warm ocean water

D. trade winds strengthen which does not bring up the cold water

Answer: trade winds weakens which does not bring up cold water

815.

Question: which one is not the exotic species in rajasthan ?

Options:

A. Lantana camara

B. Prosopis cineraria

C. Parthenium hysterophorous

D. Eucalyptus globulus

Answer: Prosopis cineraria

816.

Question: Which of the following is an example of a C4 plant ?

Options:

A. wheat

B. maize

C. barley

D. oat

Answer: maize

817.

Question: "golden rice" is rich in -

Options:

A. vitamin a

B. vitamin d

C. vitamin k

D. vitamin b

Answer: vitamin a

818.

Question: which hormone is administered to a person suffering from a marked fall in blood pressure ?

Options:

A. insulin

B. adrenaline

C. thyroxine

D. vasopressin

Answer: adrenaline

819.

Question: in cockroach, the organ of taste is -

Options:

A. epipharnyx only

B. hypopharynx only

C. palps and hypopharynx

D. palps and epipharynx

Answer: palps and hypopharynx

820.

Question: "crossing -over" takes palce in -

Options:

A. pachytene

B. diplotene

C. diakinesis

D. leptotene

Answer: pachytene

821.

Question: if a population is in genetic equilibrium what will be the rate of evolution ?

Options:

A. zero

B. half

C. double

D. triple

Answer: zero

822.

Question: seminiferous tubules are separated by -

Options:

A. sertoli cells

B. interstitial cells

C. intercellular fluids

D. lining of the seminiferous tubules

Answer: interstitial cells

823.

Question: out of the following which statement does not clearly states 'nature of science' :-

Options:

A. science is a process as well as the product of that process

B. in science there is much importance of store house of collected knowledge

C. scientific knowledge is universal

D. in science there is absolute possibilities of generalization of scientific conclusion

Answer: in science there is absolute possibilities of generalization of scientific conclusion

824.

Question: science cannot be developed without :-

Options:

A. history

B. political science

C. mathematics

D. home science

Answer: mathematics

825.

Question: concept map ' cannot' be used for:-

Options:

A. planning a lesson

B. revising a lesson

C. summative assessment of a lesson

D. formative assessment of a lesson

Answer: summative assessment of a lesson

826.

Question: which one of the following statement is not related with guiding principles of " national curriculum framework 2005 ":

Options:

A. connecting knowledge to life outside the school

B. ensuring that learning is shifted away from rote methods.

C. making examinations more complex and difficult

D. enriching the curriculum to provide for overall development of children rather than remain textbook centric.

Answer: making examinations more complex and difficult

827.

Question: according to bloom's taxonomy of educational objectives the lowest level of cognitive domain is :-

Options:

A. analysis

B. evaluation

C. comprehension

D. knowledge

Answer: knowledge

828.

Question: lesson planning in science should be guided primarily by the consideration of:

Options:

A. meeting the needs of the average child in the class

B. satisfying parents

C. the curricular goals and learning out comes

D. providing pupils with work

Answer: the curricular goals and learning out comes

829.

Question: in the reply of the question a student presents his views in favour or against on issue with certain logic and reach to conclusion . what do you call this type of question ?

Options:

A. explanatory question

B. discussion question

C. illustrative question

D. comparative question

Answer: discussion question

830.

Question: creativity is usually associated with :

Options:

A. convergent thinking

B. divergent thinking

C. modelling

D. imitation

Answer: divergent thinking

831.

Question: the word 'curriculum' is derived from:-

Options:

A. german language

B. dutch language

C. latin language

D. french language

Answer: latin language

832.

Question: by which acivity students will acquire understanding through a systematic and direct study of the biological and physical environment:-

Options:

A. science club

B. science fair

C. science laboratory

D. field trip

Answer: field trip

833.

Question: what is the full form of c.c.e.

Options:

A. continuous and comprehensive examination

B. continuous and comprehensive evalution

C. continuous and competitive evaluation

D. continuous and complex examination

Answer: continuous and comprehensive evalution

834.

Question: the last frame in linear programmed instruction is:-

Options:

A. practice frame

B. testing frame

C. teaching frame

D. introductory frame

Answer: testing frame

835.

Question: example of projected teaching aid is :

Options:

A. overhead projector

B. charts

C. flannel board

D. bulletin board

Answer: overhead projector

836.

Question: which one of the following is not a learner centered method?

Options:

A. project method

B. problem solving method

C. lecture method

D. laboratory method

Answer: lecture method

837.

Question: a teacher prepares a specific objective in her lesson plan that " students will be able to classify oxides on the basis of properties of solubility " specific objective is :

Options:

A. knowledge

B. understanding

C. analysis

D. synthesis

Answer: understanding

838.

Question: major out come of science club is :-

Options:

A. creative and organisational capability is developed

B. students get financial benefits

C. parents are benefitted

D. teachers get advantages

Answer: creative and organisational capability is developed

839.

Question: which one of the following characterstic is not related with scientific attitude:-

Options:

A. faith in superstitions

B. faith in cause and effect relationship

C. open -mindedness

D. spirit of curiosity

Answer: faith in superstitions

840.

Question: the project method of teaching is best associated with the philosophy of :

Options:

A. roussou

B. spencer

C. dewey

D. froebel

Answer: dewey

841.

Question: out of the following which method of teaching science follows the thordike's law of learning ?

Options:

A. lecture method

B. lecture- demonstration method

C. project method

D. supervised study method

Answer: project method

842.

Question: one of the important merits of the objective type test is :-

Options:

A. construction of test items is simple

B. teacher can assess the internal feelings of the student

C. linguistic problem of students can be identified

D. it is possible to cover entire content

Answer: it is possible to cover entire content

843.

Question: the dimensional formula for impulse is -

Options:

A. ML2T-1

B. ML2T-2

C. ML0T-2

D. MLT-1

Answer: MLT-1

844.

Question: two unit vectors are inclined at an angle, so that their resultant is also a unit vector. the angle is -

Options:

A. 30°

B. 60°

C. 120°

D. 150°

Answer: 120°

845.

Question: The speed time graph of a particle moving along a fixed direction is shown as -
The distance traversed by the particle between 0 to 10 sec is -

Options:

A. 120 m

B. 60 m

C. 30 m

D. 20 m

Answer: 60 m

846.

Question: two masses of 1g and 9g are moving with equal kinetic energy. the ratio of the magnitudes of their respective linear momenta is -

Options:

A. 1:3

B. 3:1

C. 1:9

D. 9:1

Answer: 1:3

847.

Question: A child is standing at the centre of turntable with his arms stretched then table is rotating about its central axis with angular speed ω_0. Now the child fold his arms then moment of Inertia of child becomes 1/3 of its initial value. Then angular speed of turntable will be :

Options:

A. 3 ω_0

B. 1/3 ω_0

C. 6 ω_0

D. 1/6 ω_0

Answer: 3 ω_0

848.

Question: the moment of inertia of a thin uniform circular disc about one of its diameter is i . the moment of inertia about an axis perpendicular to the circular surface and passing through its centre is -

Options:

A. $\sqrt{2}$ I

B. 2 I

C. 1/2 I

D. $1/\sqrt{2}$ I

Answer: 2 I

849.

Question: the time period of an artificial satellite in a circular orbit of radius r is 4 days. if the time period of another satellite in a circular orbit is 32 days then its radius of orbit will be -

Options:

A. 32 r

B. 16 r

C. 8r

D. 4r

Answer: 4r

850.

Question: The weights of an object in a coal mine, at sea level and at the top of mountain are W1, W2 and W3 respectively, then :

Options:

A. W1 < W2 < W3

B. W1 > W2 > W3

C. W1 < W2 > W3

D. W1 = W2 = W3

Answer: W1 < W2 > W3

851.

Question: if the metal bob of a simple pendulum is replaced by a wooden bob, then -

Options:

A. its time period increases

B. its time period decreases

C. its time period remains the same

D. pendulum does not oscillate

Answer: its time period remains the same

852.

Question: two wires of same material and length but cross sectional area in the ratio 1:2 are used to suspend the same load. the extensions in them will be in the ratio -

Options:

A. 1:2

B. 2:1

C. 4:1

D. 1:4

Answer: 2:1

853.

Question: The radius of a soap bubble is r. The surface tension of soap solution is T. Keeping temperature constant, the radius of the soap bubble is doubled, the energy necessary for this will be -

Options:

A. $8 \pi r^2 T$

B. $12 \pi r^2 T$

C. $16 \pi r^2 T$

D. $24 \pi r^2 T$

Answer: $24 \pi r^2 T$

854.

Question: terminal velocity of a falling sphere in a liquid is v . if the radius of sphere is doubled then sphere will fall with a terminal velocity -

Options:

A. 1/4 v

B. 1/2 v

C. 2 v

D. 4 v

Answer: 4 v

855.

Question: water is flowing through a horizontal pipe of non - uniform cross section. at the extreme narrow portion of the pipe, the water will have :

Options:

A. maximum pressure and least speed.

B. least pressure and maximum speed.

C. both pressure and speed maximum.

D. both pressure and speed least.

Answer: least pressure and maximum speed.

856.

Question: a real gas behaves like an ideal gas if its -

Options:

A. both pressure and temperature are high

B. both pressure and temperature are low

C. pressure is high and temperature is low

D. pressure is low and temperature is high

Answer: pressure is low and temperature is high

857.

Question: The temperature of a substance increases by 27°C. On the Kelvin scale this increase is -

Options:

A. 2.46 k

B. 7 k

C. 27 k

D. 300 k

Answer: 27 k

858.

Question: a quantity of heat q is supplied to a monoatomic ideal gas which expands at constant pressure. the fraction of heat that goes into work done by the gas is -

Options:

A. 2/5

B. 3/5

C. 2/3

D. 1

Answer: 2/5

859.

Question: A black body is maintained at 27°C and 927°C. The ratio of radiations emitted, will be -

Options:

A. 1:4

B. 1:16

C. 1:64

D. 1:256

Answer: 1:256

860.

Question: For the wave shown in the figure, if frequency is 150 Hz, then wavelength and velocity are -

Options:

A. 0.04 m, 10 ms-1

B. 0.06 m, 12 m s-1

C. 0.08 m, 12 ms-1

D. 0.08 m, 10 ms-1

Answer: 0.08 m, 12 ms-1

861.

Question: far point for myopic eye is 50 cm. the nature and power of corrective lens is -

Options:

A. concave, -2 d

B. concave, +2 d

C. convex, -2 d

D. convex, 0.5 d

Answer: concave, -2 d

862.

Question: an air bubble under water shines bacause of the phenomenon of -

Options:

A. total internal reflection

B. dispersion

C. interference

D. diffraction

Answer: total internal reflection

863.

Question: a given charge situated at a distance r from an electric dipole on its axis experience a force f. if the distance of the charge from the dipole is doubled, the force acting on the charge will be -

Options:

A. 4f

B. f/8

C. f/4

D. f/2

Answer: f/8

864.

Question: Two condensors of capacity C and 1/4 C are connected to a battery of V volt, as shown in figure- Then the work done in charging fully both the condensors is

Options:

A. 1/4 CV2

B. 3/4 CV2

C. 8/5 CV2

D. 5/8 CV2

Answer: 5/8 CV2

865.

Question: In the adjacent figure, the current flowing through 10Ω resistance is:

Options:

A. 0 a

B. 1/5 a

C. 25/7 a

D. 7/25 a

Answer: 0 a

866.

Question: if an electron enters in a magnetic field with its velocity pointing in the same direction as the magnetic field, then -

Options:

A. the electron will turn to its right

B. the electron will turn to its left

C. the velocity of the electron will remain unchanged

D. the velocity of the electron will increase

Answer: the velocity of the electron will remain unchanged

867.

Question: An Aeroplane is moving due north with a velocity of 400 km/h. The potential difference in volt between the ends of its wings, distant 40 m from each other will be :
[given:- the earth's magnetic field intensity B = 0.36 * 10-4 Tesla]

Options:

A. 0.153 volt

B. 1.6 volt

C. 0.16 volt

D. 0.016 volt

Answer: 0.16 volt

868.

Question: The power in AC circuit is given by : P = Erms Irms cosφ
The value of power factor cosφ in series LCR circuit at resonance is :-

Options:

A. 0

B. 1

C. Erms * Irms

D. (Erms* Irms)

E. √2

Answer: 1

869.

Question: a diffraction pattern is obtained using a beam of red light. if the red light is replaced by blue light then:

Options:

A. bands disappear altogether

B. bands became broader and farther apart

C. diffraction bands narrower and crowded together

D. diffraction bands remains same

Answer: diffraction bands narrower and crowded together

870.

Question: the mass of a moving photon is :

Options:

A. hv/c^2

B. hv/c

C. hv

D. zero

Answer: hv/c^2

871.

Question: In the nucleus of $_{11}Na^{23}$ the number of protons, neutrons and electrons are -

Options:

A. 11, 12, 11

B. 11, 12, 0

C. 12, 11, 0

D. 23, 12, 11

Answer: 11, 12, 0

872.

Question: a message signal of frequency 10 khz and peak voltage 10 volt is used to modulate a carrier wave of frequency 1 mhz and peak voltage 20 volt, then modulation index will be -

Options:

A. 0.5

B. 2

C. 10-3

D. 10+3

Answer: 0.5

873.

Question: a projectile following the usual parabolic trajectory explodes into fragments midway in air due to internal forces. the centre of mass of the system-

Options:

A. follows the same parabolic trajectory

B. moves in the direction of fragments

C. moves with constant velocity

D. moves vertically downward

Answer: follows the same parabolic trajectory

874.

Question: The maximum and minimum distance of a comet from the Sun are 2.6×10^{12} m and 5.2×10^{10} m respectively. When it is farthest to the Sun, its velocity is 4×10^4 m s^{-1}, then its velocity when nearest to the Sun will be:

Options:

A. 8×10^2 m s-1

B. 3.38×10^{18} m s-1

C. 2×10^6 m s-1

D. 4×10^4 m s-1

Answer: 2×10^6 m s-1

875.

Question: A box of mass 200 gm is attached to one end of a spring whose other end is fixed to a rigid support. The ratio of Q when a mass of 800 gm is placed inside

the box to the Q when empty box is with the spring will be:

Options:

A. 2

B. $\sqrt{5}$

C. 1/2

D. $1/\sqrt{5}$

Answer: $\sqrt{5}$

876.

Question: in a driven harmonic oscillator power absorbed is maximum at the-

Options:

A. amplitude resonance

B. highest possible driving frequency

C. velocity resonance

D. frequency where the amplitude drops to 1/e of its maximum value

Answer: velocity resonance

877.

Question: A transverse wave is represented by y = A sin(wt - kx), The value of wavelength for which the wave velocity is equal to the maximum particle velocity will be:

Options:

A. ΠA

B. 1/2 ΠA

C. A

Answer: ΠA

878.

Question: Neoprene is prepared by polymerisation of which of the following ?

Options:

A. 2-chloro-1, 3-butadiene

B. 2-methyl 1, 3-butadiene

C. 1, 3-butadiene

D. Acrylonitrile

Answer: 2-chloro-1, 3-butadiene

879.

Question: The monomers of dacron are :

Options:

A. decane and decanol

B. decanone and decanol

C. Ethylene glycol and terephthalic acid

D. Ethylene glygol and phthalic acid

Answer: Ethylene glycol and terephthalic acid

880.

Question: The example of oligosaccharide is :

Options:

A. Sucrose

B. Glucose

C. Ribose

D. Cellulose

Answer: Sucrose

881.

Question: Deficiency of which of the following vitamin causes pernicious anaemia ?

Options:

A. Vitamin-B_1

B. Vitamin-B2

C. Vitamin-B6

D. Vitamin-B12

Answer: Vitamin-B12

882.

Question: Which of the following statement is not correct for nucleic acids ?

Options:

A. A unit formed by the attachment of a base to 1' position of sugar is known as nucleoside.

B. Nucleoside linked to phosphoric acid at 5' position of sugar gives nucleotide.

C. Nucleotides are joined together by phosphodiester linkage between 3' and 5' carbon atoms of the pentose sugar.

D. A unit formed by the attachment of base to 1' position of sugar is known as nucleotide.

Answer: A unit formed by the attachment of base to 1' position of sugar is known as nucleotide.

883.

Question: The IUPAC name of following compound is
CH3-C-CH2-CH2-CH2-C-OH
0
0

Options:

A. 6-Carboxy, hexan-2-one

B. 5-Oxo hexanoic acid

C. Butyl methyl ketone

D. 1,5-diketohexanol

Answer: 5-Oxo hexanoic acid

884.

Question: Which of the following is a disinfectant ?

Options:

A. Soframicine

B. Furacine

C. 0.2% solution of phenol

D. 1% solution of phenol

Answer: 1% solution of phenol

885.

Question: Which of the following is not a derivative of barbituric acid ?

Options:

A. Equanil

B. Veronal

C. Amytal

D. Nembutal

Answer: Equanil

886.

Question: Freundlich adsorption isotherm is expressed as equation

Options:

A. $m = kp^{1/n}$ $(n > 1)$

B. X

C. $= kP^n$ $(n > 1)$

D. m

E. $= kP^n$ $(n > 1)$

F. X

G. $= kP^{1/n}$ $(n > 1)$

H. m

Answer: X - $= kP^{1/n}$ $(n > 1)$ - m

887.

Question: Which of the following acts as promoter for iron in Haber's process?

Options:

A. Mn

B. Mo

C. Mg

D. W

Answer: Mo

888.

Question: An example of gas dispersed in solid is

Options:

A. Cloud

B. Froth

C. Fog

D. Pumice Stone

Answer: Pumice Stone

889.

Question: The polymer having strongest intermolecular forces is

Options:

A. Neoprene

B. Polythene

C. Nylon-6

D. Buna-S

Answer: Nylon-6

890.

Question: Excess of which ion in drinking water causes methemoglobinemia ?

Options:

A. F

B. SO_4^{2-}

C. NO_3

D. Cl

Answer: NO_3

891.

Question: Which of the following is used as cryogenic agent ?

Options:

A. Liquid Helium

B. Liquid Neon

C. Liquid Argon

D. Liquid Xenon

Answer: Liquid Helium

892.

Question: The correct order of colour intensity of Silver halides is :

Options:

A. AgCl < AgI < AgBr

B. AgCl < AgBr < AgI

C. AgI < AgBr < AgCl

D. AgBr < AgCl < AgI

Answer: AgCl < AgBr < AgI

893.

Question: Which of the following pair of elements does not have almost same size ?

Options:

A. Zr, Hf

B. Mo, W

C. Nb, Os

D. Pd, Pt

Answer: Nb, Os

894.

Question: Wilson's disease causes accumulation of which metal in the liver, kidney and brain ?

Options:

A. Cu

B. Fe

C. Ca

D. Mg

Answer: Cu

895.

Question: Which of the following is not a common component of Photo-chemical smog ?

Options:

A. PAN (Peroxy Acetyl Nitrate)

B. 03

C. Nitric Oxide

D. CFCs

Answer: CFCs

896.

Question: λmax for the following compound is :
(Image of a chemical structure)

Options:

A. 273 nm

B. 293 nm

C. 303 nm

D. 313 nm

Answer: 273 nm

897.

Question: The $t_{1/2}$ of a reaction is halved as the initial concentration of the reactant is doubled. What is the order of the reaction?

Options:

A. 0

B. 1

C. 2

D. 3

Answer: 2

898.

Question: What is the standard potential E° of the cell $Zn|Zn2+ (1M) \| I (1M) | CuI | Cu$ of $E°Zn2+ | Zn = -0.76V$ and $E° Cu+ | Cu = -0.17V$?

Options:

A. 1.10 V

B. 0.93 V

C. -0.93 V

D. 0.59 V

Answer: 0.59 V

899.

Question: 18 g of glucose ($C_6H_{12}O_6$) is dissolved in 1 kg of water, at what temperature will water boil at 1.013 bar ? (Kb for water = 0.52 K kg mol^{-1})

Options:

A. 0.052 K

B. 0.52 K

C. 373.15 K

D. 373.202 K

Answer: 373.202 K

900.

Question: The reaction of diazonium salt with aniline to give p-amino azo benzene is an example of which type of reaction ?

Options:

A. Electrophilic addition reaction

B. Nucleophilic addition reaction

C. Electrophilic substitution reaction

D. Nucleophilic substitution reaction

Answer: Electrophilic substitution reaction

901.

Question: The prokaryotic cell lacks

Options:

A. Nuclear envelope and DNA

B. Nuclear envelope and plastids

C. DNA and mitochondria

D. Cell membrane and nucleus

Answer: Nuclear envelope and plastids

902.

Question: During secondary growth a wavy ring of cambium is formed in

Options:

A. Dicot stem

B. Dicot root

C. Monocot stem

D. Monocot root

Answer: Dicot root

903.

Question: Which of the following term is not used to describe the occurrence of male and female reproductive structures on different plants ?

Options:

A. Heterothallic

B. Dioecious

C. Monoecious

D. Unisexual

Answer: Monoecious

904.

Question: "Osmosis is the diffusion of a solution of a weaker concentratior into a solution of stronger concentration when: both are seperated by a semi-permeable membrane." What is the error in the above statement ?

Options:

A. The movement of solvent is not specified.

B. There is no mention of DPD.

C. Behaviour of semi-permeable membrane is not specified.

D. The exact concentrations are not indicated.

Answer: The movement of solvent is not specified.

905.

Question: Micro-organisms like bacteria encode much more information than the triplets they have. This indicates that

Options:

A. The genetic code is overlapping.

B. Genes are non-overlapping.

C. Each base pair codes for one amino acid.

D. Genetic code is non-overlapping but the genes are overlapping.

Answer: Genetic code is non-overlapping but the genes are overlapping.

906.

Question: Chemiosmotic theory states that an 'ion' flowing down its electrochemical gradient drives ATP synthesis. Here the 'ion' concerned is :

Options:

A. Phosphate

B. Iron

C. Calcium

D. Hydrogen

Answer: Hydrogen

907.

Question: Which one of the following is an aerobic process?

Options:

A. Lactic acid fermentation

B. Glycolysis

C. Alcoholic fermentation

D. Acetic acid fermentation

Answer: Acetic acid fermentation

908.

Question: The inhibitory effect of red light on flowering during critical dark period in short day plants can be overcome by

Options:

A. Blue light

B. Far-red light

C. Ultraviolet rays

D. Green light

Answer: Far-red light

909.

Question: "Jared Diamond has described "the evil quartet"; the four major causes of biodiversity losses." Which of the following alternative is not included in the quartet ?

Options:

A. Habitat-loss and fragmentation

B. Pollution

C. Over-exploitation

D. Co-extinctions

Answer: Pollution

910.

Question: Which one of the following is the essential nutrient element required in the photosynthetic oxidation of water?

Options:

A. Magnesium

B. Manganese

C. Molybdenum

D. Iron

Answer: Manganese

911.

Question: Functions of smooth muscles, cardiac muscles, organs and glands are regulated by which of the following system?

Options:

A. Parasympathetic

B. Sympathetic

C. Central nervous

D. Autonomic Nervous System

Answer: Autonomic Nervous System

912.

Question: Which of the following is not a part of the Kidney structure ?

Options:

A. Malpighian body

B. Malpighian tubule

C. Glomerulus

D. Loop of Henle

Answer: Malpighian tubule

913.

Question: In cockroach the cavities of foregut and hindgut are lined with

Options:

A. Salivary Glands

B. Gizzard

C. Chitinous teeth

D. Cuticle

Answer: Cuticle

914.

Question: Which of the following concept is attributed to Charles Darwin ?

Options:

A. Use and disuse of organs is of great importance in evolution.

B. Every cell comes from pre-existing cells.

C. In the struggle for existence, the fittest would survive.

D. The gametes carry only one character of the pairs of contrasting characters.

Answer: In the struggle for existence, the fittest would survive.

915.

Question: Match the structures given in Column I with the tissue given in Column II in which they are present. Select the correct answer using the codes given below :

Column I
(a) Chondrocyte (i)
(b) Fat Cells (ii)
(c) Myofibril (iii)
(d) Axon (iv)
(e) Periosteum (v)
Column II
Nervous tissue
Voluntary muscle fibre
Cartilage
Bone
Adipose tissue

Options:

A. (ii) (iii) (v) (iv) (i)

B. (iv) (v) (i) (ii) (iii)

C. (iii) (v) (ii) (i) (iv)

D. (v) (i) (iv) (ii) (iii)

Answer: (iii) (v) (ii) (i) (iv)

916.

Question: Probiotics are

Options:

A. cancer inducing microbes

B. safe antibiotics

C. a kind of food allergen

D. live microbial food supplement

Answer: live microbial food supplement

917.

Question: Ti plasmid used in genetic enginneering is obtained from

Options:

A. Bacillus thuringiensis

B. Agrobacterium rhizogens

C. Agrobacterium tumefaciens

D. Thermus aquaticus

Answer: Agrobacterium tumefaciens

918.

Question: Which one of the following phylum is characterised by absence of true coelom ?

Options:

A. Nematoda

B. Echinodermata

C. Mollusca

D. Annelida

Answer: Nematoda

919.

Question: Select the incorrect statement given below.

Options:

A. Mycoplasma are bacteria that lack cell wall.

B. Bacteria are small infectious agents that replicates only inside the living cells of host.

C. Viroids are infectious RNA molecules.

D. Prions are infectious protein particles.

Answer: Bacteria are small infectious agents that replicates only inside the living cells of host.

920.

Question: The nervous system in humans develop from embryonic

Options:

A. Ectoderm

B. Endoderm

C. Mesoderm

D. Both endoderm and mesoderm

Answer: Ectoderm

921.

Question: Crossing over takes place between

Options:

A. two chromatids of a chromosome

B. sister chromatids of homologous chromosomes

C. non-sister chromatids of homologous chromosomes

D. non-sister chromatids of non-homologous chromosomes

Answer: non-sister chromatids of homologous chromosomes

922.

Question: which of the following is not necessary for photochemical smog formation ?

Options:

A. NOx

B. hydrocarbons

C. sunlight

D. SO2

Answer: SO2

923.

Question: which of the following nitrogen oxides would not contribute to acidification of rain water ?

Options:

A. NO

B. N2O

C. NO2

D. N205

Answer: N2O

924.

Question: The molar conductivities of AgNO3, Kcl and KNO3 at inifinite dilution are:
$\Lambda°m$ (AgNO3) = 133.4, $\Lambda°m$ (Kcl) = 149.9, $\Lambda°m$ (KNO3) = 144.9,
The molar conductivity of Agcl at infinite dilution will be-

Options:

A. 128.4 Ω-1 cm² mol-1

B. 161.4 Ω-1 cm² mol-1

C. 138.4 Ω-1 cm² mol-1

D. 428.2 Ω-1 cm² mol-1

Answer: 138.4 Ω-1 cm² mol-1

925.

Question: in the daniel cell, anode is:-

Options:

A. copper electrode

B. zinc electrode

C. silver-silver chloride

D. calomel electrode

Answer: zinc electrode

926.

Question: gas which is generally used to provide an inert atmosphere in arc -welding is :-

Options:

A. helium

B. radon

C. krypton

D. argon

Answer: argon

927.

Question: the electronic configuration of the most electronegative element is :-

Options:

A. 1S22S22P4

B. 1S2 2S22P63S23P5

C. 1S22S22P5

D. 1S22S22P6

Answer: 1S22S22P5

928.

Question: which of the following is a transuranic element ?

Options:

A. neptunium

B. protactinium

C. actinium

D. thorium

Answer: neptunium

929.

Question: select the element which is trace element in biological system.:-

Options:

A. C

B. ca

C. h

D. cu

Answer: cu

930.

Question: alcoholic solution of koh is used for :-

Options:

A. dehydrogenation

B. dehalogenation

C. dehydration

D. dehydrohalogenation

Answer: dehydrohalogenation

931.

Question: The absorption maximum for the compound

in ethanol is

Options:

A. 273 ημ

B. 268 ημ

C. 258 ημ

D. 278 ημ

Answer: 258 ημ

932.

Question: the bathochromic shift in an absorption band occurs due to :-

Options:

A. decrease in wave length

B. increase in wavelength

C. increase in intensity

D. decrease in intensity

Answer: increase in wavelength

933.

Question: the rate according to collision theory is given by :-

Options:

A. Rate =Ze-Ea/RT

B. Rate =ZeEa/RT2

C. Rate =ZeEa/RT

D. Rate =Ze-Ea/RT2

Answer: Rate =Ze-Ea/RT

934.

Question: in a reaction between a and b, the rate of reaction becomes double on doubling the concentration of a and rate becomes four times on doubling the concentration of b . what is the order of reaction with respect to a and b ?

Options:

A. 0 and 1

B. 1 and 2

C. 2 and 1

D. 0 and 2

Answer: 1 and 2

935.

Question: To Lower the freezing point of 1.0 kg water to -40°C, calculate the moles of Nacl needed (Kf = 1.86K kgmol^{-1})

Options:

A. 10.75

B. 21.5

C. 59.5

D. 40.0

Answer: 10.75

936.

Question: Which of the following alkyl halide undergoes faster by SN^1 reaction :-

Options:

A. CI

B. CI

C. CI

D. CI

Answer: CI

937.

Question: which of the following is not a product of recombinant dna technology ?

Options:

A. glo-fish

B. bt-cotton

C. flavr savr

D. dolly

Answer: dolly

938.

Question: unicellular eukaryotes are included in which kingdom of whittaker's classification ?

Options:

A. monera

B. protista

C. fungi

D. all of these

Answer: protista

939.

Question: characteristics of the class chlorophyceae are-

Options:

A. presence of chlorophyll a, chlorophyll c and stored food starch

B. presence of chlorophyll a, chlorophyll d and 2-8 flagella

C. presence of chlorophyll a, chlorophyll b and no flagella

D. presence of chlorophyll a, chlorophyll b and 2-8 flagella

Answer: presence of chlorophyll a, chlorophyll b and 2-8 flagella

940.

Question: consider the following statements and select the correct statements - a. dna replication is a semi-conservative process b. dna replication is a semi-discontinuous process c. dna polymerase iii is responsible for replacement of the primer sequence of the okazaki fragments d. primer is synthesized on both the strands of the dna

Options:

A. only a

B. a and c

C. a, b, and d

D. a, b, c and d

Answer: a, b, and d

941.

Question: monocot plant having secondary growth is

Options:

A. Yucca

B. Bamboo

C. Banana

D. Cycas

Answer: Yucca

942.

Question: pulses belong to which family ?

Options:

A. liliaceae

B. poaceae

C. leguminosae

D. brassicaceae

Answer: leguminosae

943.

Question: the stomata are closed -

Options:

A. when ph is more than 7

B. in the presence of auxin

C. in the presence of cytokinin

D. when ph is less than 7

Answer: when ph is less than 7

944.

Question: which of the following process does not happen during the light reaction of photosynthesis ?

Options:

A. photolysis of water

B. reduction of carbon -di-oxide

C. photophosphorylation

D. reduction of nadp

Answer: reduction of carbon -di-oxide

945.

Question: Match the following-
Column I
A. C_2 cycle
B. C3 cycle
C. C4 cycle
D. Common Respiratory Pathway
E. Citric acid cycle
Comumn II
(i) Glycolysis
(ii) Kreb's cycle
(iii) Calvin's cycle
(iv) Photorespiration
(v) Hatch and Slack cycle

Options:

A. a(iv) b(iii) c(v) d(i) e(ii)

B. a(v) b(iv) c(ii) d(i) e(iii)

C. a(iv) b(ii) c(v) d(i) e(iii)

D. a(i) b(iii) c(v) d(iv) e(ii)

Answer: a(iv) b(iii) c(v) d(i) e(ii)

946.

Question: seed treatment to enhance flowering in the plant is known as -

Options:

A. etiolation

B. vernalisation

C. redifferentiation

D. skotomorphogenesis

Answer: vernalisation

947.

Question: which of the following is non-proteinaceous biocatalyst ?

Options:

A. zymogen

B. abzyme

C. ribozyme

D. apo-enzyme

Answer: ribozyme

948.

Question: guttation takes place through -

Options:

A. lenticels

B. hydathodes

C. pneumatophores

D. phellogen

Answer: hydathodes

949.

Question: largest male gamete is found in -

Options:

A. Pinus

B. Cedrus

C. Cycas

D. Gnetum

Answer: Cycas

950.

Question: only wild gymnosperm found in rajasthan is -

Options:

A. Ephedra

B. Cycas

C. Pinus

D. Welwitschia

Answer: Ephedra

951.

Question: mycoplasma differ from the other prokaryotes in -

Options:

A. presence of chitin in cell wall

B. presence of murein in cell wall

C. presence of proteins in cell wall

D. absence of cell wall

Answer: absence of cell wall

952.

Question: lichens are the major pollution indicator of -

Options:

A. sulphur-di-oxide

B. nitrous oxide

C. suspended particulate matter

D. mercury

Answer: sulphur-di-oxide

953.

Question: the part of a healthy plant which should be used as explants to produce haploid plant is -

Options:

A. meristem

B. pollen grain

C. root tip

D. adventitious buds

Answer: pollen grain

954.

Question: antibodies are -

Options:

A. glycolipid

B. glycoprotein

C. carbohydrate

D. nucleic acid

Answer: glycoprotein

955.

Question: iodine is essential for the synthesis of which hormone ?

Options:

A. adrenaline

B. insulin

C. thyroxine

D. testosterone

Answer: thyroxine

956.

Question: "megakaryocytes" present in bone marrow produce -

Options:

A. white blood corpuscles

B. red blood corpuscles

C. platelets

D. plasma

Answer: platelets

957.

Question: in earthworm the pair of ovaries are present in -

Options:

A. intersegmental septum of ninth and tenth segment

B. 11th and 12th segment

C. intersegmental septum of 10th and 11th segment

D. intersegmental septum of 12th and 13th segment

Answer: intersegmental septum of 12th and 13th segment

958.

Question: during the formation of urine ' ultrafilteration ' takes place in -

Options:

A. bowman's capsule

B. proximal convulated tubule

C. distal convulated tubule

D. collecting tubule

Answer: bowman's capsule

959.

Question: oestrus cycle is not a feature of -

Options:

A. deer

B. monkey

C. dog

D. tiger

Answer: monkey

960.

Question: If the root mean square speed of an argon gas atom at temperature T is equal to the average speed of a helium gas atom at -20 °C, then T will be :
Given:- atomic mass of Ar = 39.9 u
Atomic mass of He= 4.0 u

Options:

A. 2141.3 K

B. 2141.3 °C

C. 6729.8 K

D. 6729.8 °C

Answer: 2141.3 K

961.

Question: for constructive interference -

Options:

A. The resultant intensity is equal to the sum of intensities of individual waves.

B. The crests of two waves or the troughs of two waves coincide.

C. The phase difference between two waves is an odd multiple of π.

D. The time interval between two waves is an even multiple of T.

Answer: The crests of two waves or the troughs of two waves coincide.

962.

Question: For mean free path λ :

Options:

A. At constant temperature, λ increases with increasing pressure.

B. At constant pressure, λ decreases with increasing temperature.

C. λ increases on decreasing the size of molecule.

D. λ increases as the number of molecules increases.

Answer: λ increases on decreasing the size of molecule.

963.

Question: two coherent sources of equal intensity produce maximum intensity of 144 units at a point. if the intensity of one of the source is reduced by 25%, then the intensity of light at the same point will be:

Options:

A. 108 units

B. 90 units

C. 144 units

D. 121 units

Answer: 121 units

964.

Question: A boat at anchor is rocked by waves whose crests are 120 m apart and velocity is 20 ms-1. The boat bounces up once in every :

Options:

A. 1/6 sec

B. 3 sec

C. 6 sec

D. 1/3 sec

Answer: 6 sec

965.

Question: as the isotopic mass of mercury decreases -

Options:

A. the critical temperature increases slightly.

B. the critical temperature decreases slightly.

C. critical temperature remains constant.

D. critical temperature decreases abruptly.

Answer: the critical temperature increases slightly.

966.

Question: a 250 gm stone is revolved at the end of 40 cm long string at the rate of 3 revolution/sec. if after 20 sec it is making 1/2 revolution/sec then the rate of change of angular momentum will be -

Options:

A. $\pi* 10-2$

B. $\pi* 10+2$

C. $\pi/2 * 10-2$

D. $\pi/2 * 10+2$

Answer: $\pi* 10-2$

967.

Question: In a perfectly inelastic direct collision maximum transfer of energy takes place if -

Options:

A. $m_1 >> m2$

B. $m_1 << m2$

C. $m_1 = m2$

D. $m2 = 0$

Answer: $m_1 = m2$

968.

Question: among the following homonuclear molecules, the paramagnetic molecule is -

Options:

A. N2

B. F2

C. O2

D. C2

Answer: O2

969.

Question: 10 g substance (molar mass= 50) is dissolved in 200 ml water and density of this solution was found to be 1.05 g/ml and approx. molality of the solution is -

Options:

A. 1.05 mol kg-1

B. 1.0 mol kg-1

C. 0.1 mol kg-1

D. 2.0 mol kg-1

Answer: 1.0 mol kg-1

970.

Question: principle quantum number (n)

Options:

A. can have the values from 0 to ∞.

B. determines the energy of the orbital to larger extent.

C. defines the three dimensional shape of the orbital.

D. gives the Spatial orientation of the orbital with respect to standard set of co-ordinate axis.

Answer: determines the energy of the orbital to larger extent.

971.

Question: among the following substances the least viscous liquid is-

Options:

A. water

B. mercury

C. coal-tar

D. glycerol

Answer: water

972.

Question: Critical temperature of CO2 is -

Options:

A. 5.3 °C

B. 30.98 °C

C. 126 °C

D. 35 °C

Answer: 30.98 °C

973.

Question: which one of the following is correct order of covalent character in the molecule :

Options:

A. $MgCl_2$ < NaCl < $AlCl_3$ < $SnCl_4$

B. $SnCl_4$ < $AlCl_3$ < $MgCl_2$ < NaCl

C. NaCl < $MgCl_2$ < $AlCl_3$ < $SnCl_4$

D. $SnCl_4$ < $AlCl_3$ < NaCl < $MgCl_2$

Answer: NaCl < $MgCl_2$ < $AlCl_3$ < $SnCl_4$

974.

Question: The hybridisation state of central atom in H_2O, SF6 and PCl5 molecules respectively are:

Options:

A. sp^3, sp^3d^2 and sp^3d

B. sp^2, sp^3d^2 and dsp^3

C. sp^3d^2, sp^3 and sp^2

D. sp^3d, sp^3 and sp^3d^2

Answer: sp^3, sp^3d^2 and sp^3d

975.

Question: The number of unpaired electrons in the complex ion $[Co(NH_3)_6]^{3+}$ are:-

Options:

A. zero

B. one

C. two

D. three

Answer: zero

976.

Question: the hexadentate ligand is -

Options:

A. ethylene diaminetetraacetate

B. oxalate

C. ethane -1,2 - diamine

D. ammonia

Answer: ethylene diaminetetraacetate

977.

Question: The correct IUPAC name of $[Cr(NH3)3(H2O)3]\,cl_3$ is :-

Options:

A. triamminetriaquachromium(iii) chloride

B. triamminetriaquachromium(ii) chloride

C. triaminotriaquochromium(iii) chloride

D. triaminotriaquochromium(ii) chloride

Answer: triamminetriaquachromium(iii) chloride

978.

Question: atomic number of an element is 31. atomic number of elements just above it and just below it in its group are :-

Options:

A. 30,32 respectively

B. 13,49 respectively

C. 23, 49 respectively

D. 21,41 respectively

Answer: 13,49 respectively

979.

Question: which pair of atomic number represents s-block elements:-

Options:

A. 7,19

B. 22,55

C. 12,15

D. 19,56

Answer: 19,56

980.

Question: a solution with ph=3 is more acidic than a solution with ph=6 by a factor of :-

Options:

A. 2

B. 3

C. 1 x 103

D. 0.5

Answer: 1 x 103

981.

Question: the endothermic process is :-

Options:

A. $F+e \rightarrow F-$

B. $cl + e \rightarrow cl-$

C. $O + e \rightarrow O-$

D. $O- + e \rightarrow O2-$

Answer: $O- + e \rightarrow O2-$

982.

Question: The oxidation number of Fe in $[Fe(CN)_6]^{3-}$, $[Fe(CN)_6]^{4-}$, $[Fe(SCN)]^{2+}$ and $[Fe(H_2O)_6]^{3+}$ respectively would be :-

Options:

A. +3, +2, +3 and +3

B. +3, +3, +3 and +3

C. +2, +2, +2 and +2

D. +3, +2, +2 and +2

Answer: +3, +2, +3 and +3

983.

Question: which one of the following is the ore of zinc:-

Options:

A. calamine

B. kaolinite

C. malachite

D. bauxite

Answer: calamine

984.

Question: H_3PO_4 is known as:-

Options:

A. pyrophosphorous acid

B. hypophosphoric acid

C. orthophosphoric acid

D. pyrophosphoric acid

Answer: orthophosphoric acid

985.

Question: The IUPAC Name of
CH3
H3C-CH-CH3 is

Options:

A. 1-isopropyl-3-methylcyclopentane

B. 1-methyl-3-isopropylcyclopentane

C. 4-methyl-1-isopropylcyclopentane

D. 1-methyl-4-isopropylcyclopentane

Answer: 1-isopropyl-3-methylcyclopentane

986.

Question: which one of the following is meta directing group?

Options:

A. $-NH_2$

B. $-SO_3H$

C. $-OCH_3$

D. $-C_2H_5$

Answer: $-SO_3H$

987.

Question: Aldehydes having at least one α- hydrogen undergoes a reaction in the presence of dilute alkali as catalyst to form β-hydroxyaldehydes. The reaction is known as :-

Options:

A. aldo condensation

B. cannizaro reaction

C. decarboxylation

D. hell-volhard zelinsky reaction

Answer: aldo condensation

988.

Question: the basic strength of alkylamines in the aqueous state is in the order of :-

Options:

A. NH3 > C2H5NH2 > $(C_2H_3)_3$N > (C2H5)2NH

B. (C2H5)2NH > $(C_2H_3)_3$N > C2H5NH2 > NH3

C. (C2H5)3N > (C2H5)2NH > C2H5NH2 > NH3

D. NH3 > C2H5NH2 > $(C_2H_3)_2$NH > $(C_2H_3)_3$N

Answer: (C2H5)2NH > $(C_2H_3)_3$N > C2H5NH2 > NH3

989.

Question: grignard reagents add to the carbonyl group of ketones to form :-

Options:

A. methanol

B. primary alcohol

C. secondary alcohol

D. tertiary alcohol

Answer: tertiary alcohol

990.

Question: synthetic rubber neoprene is the polymer of :-

Options:

A. isoprene

B. chloroprene

C. caprolactum

D. acrylonitrile

Answer: chloroprene

991.

Question: bakelite is a condensation polymer of :-

Options:

A. C6H5OH and Caprolactum

B. Melamine and HCHO

C. HCHO and phthalic acid

D. C6H5OH and HCHO

Answer: C6H5OH and HCHO

992.

Question: which of the following amino acid connot be made by human body ?

Options:

A. glycine

B. alanine

C. tryptophan

D. proline

Answer: tryptophan

993.

Question: calcium carbide on treatment with water yields:-

Options:

A. ethene

B. ethyne

C. ethane

D. methane

Answer: ethyne

994.

Question: Match the following list
List 1
(i)antiseptic
(ii) antacid
(iii) tranquilizer
(iv)analgesics
List 2
(a) Al(OH)3
(b)Kills microorganism
(c) morphine
(d) Chlordiazepoxide
Correct code is :-

Options:

A. (i) (ii) (iii) (iv) c b d a

B. (i) (ii) (iii) (iv) b a d c

C. (i) (ii) (iii) (iv) d c b a

D. (i) (ii) (iii) (iv) c d a b

Answer: (i) (ii) (iii) (iv) b a d c

995.

Question: the gold numbers of some protective colloids are given. which one of these is most protective ?

Options:

A. gelatin(0.005-0.01)

B. haemoglobin(0.03-0.07)

C. potato starch(25)

D. gum arabic(0.15-0.25)

Answer: gelatin(0.005-0.01)

996.

Question: "The magnetic field arises due to electric current produced by convective motion of metallic fluids in the outer core of the earth." This statement is known as

Options:

A. Joule's Effect

B. Seeback Effect

C. Thomson Effect

D. Dynamo Effect

Answer: Dynamo Effect

997.

Question: In a series LCR circuit the voltage across the resistance, capacitance and inductor is 10 V each. If the capacitor is short circuited, the voltage across the inductor will be

Options:

A. 10 V

B. $10\sqrt{2}$ V

C. $10/\sqrt{2}$ V

D. 20 V

Answer: $10/\sqrt{2}$ V

998.

Question: Choose the correct expression for the magnetic energy stored in a solenoid of length l and area A. (Here B is magnetic field)

Options:

A. $(1/2\mu_0)$ BA²l

B. $(1/2\mu_0)$ B²Al

C. $(1/2\mu_0)$ BA²

D. $(1/2\mu_0)$ BAl

Answer: $(1/2\mu_0)$ B²Al

999.

Question: A charged particle enters a uniform magnetic field at right angle to magnetic field. The field exists for a length equal to 1.5 times the radius of the circular path of the particle in the field. The particle will be deviated from its path by

Options:

A. 90°

B. $\sin^{-1}(2/3)$

C. 30°

D. 180°

Answer: 180°

1000.

Question: A ring is made of a wire having a resistance $R_0 = 12\Omega$. Find the ratio of length l_1 to l_2 as shown in figure, so that the resistance R of the sub-circuit between A and B points is equal to $8/3\Omega$.

Options:

A. $l_1/l_2 = 3/8$

B. $l_1/l_2 = 1/2$

C. $l_1/l_2 = 5/8$

D. $l_1/l_2 = 4/3$

Answer: $l_1/l_2 = 1/2$

1001.

Question: A particle is moving three times as fast as an electron. The ratio of the de Broglie wavelength of the particle to that of the electron is 1.813×10^{-4}. The mass of particle is (mass of electron $m_e = 9.11 \times 10^{-31}$ kg)

Options:

A. 6.752×10^{-31} kg

B. 1.675×10^{-35} kg

C. 1.675×10^{-24} kg

D. 1.675×10^{-27} kg

Answer: 1.675×10^{-27} kg

1002.

Question: The half-life of a radionuclide T is related with its mean life τ as

Options:

A. $T = \tau$

B. $T = \tau/\ln^2$

C. $T = \tau/\ln 2$

D. $T = 2.303 \tau$

Answer: $T = \tau/\ln 2$

1003.

Question: To get an output Y = 1 from the logic circuit given in figure, the input must be

Options:

A. 1 0 0

B. 0 0 1

C. 1 0 1

D. 0 1 0

Answer: 1 0 1

1004.

Question: Which one of following diode is reverse biased?

Options:

A. 15 V

B. -5 V

C. 10 V

D. 5 V

Answer: -5 V

1005.

Question: In a Young's double slit experiment, 12 fringes are observed to be formed in a certain segment of the screen. If wavelength of light is reduced to two third of its initial value, number of fringes observed in the same segment of the screen will be

Options:

A. 8

B. 12

C. 18

D. 36

Answer: 18

1006.

Question: A thin uniform rod of length l is rotating at an angular velocity ω about an axis passing through centre and perpendicular to rod. As the drawing indicates, the rod is hinged at two places, one quarter of the length from each end. Without the aid of external torques, the rod suddenly assumes U shape, with the arms of the U parallel to the rotation axis. What is the angular velocity of the rotating U shaped body?

Options:

A. ω

B. 1.5 ω

C. 2.0 ω

D. 3.0 ω

Answer: 2.0 ω

1007.

Question: If M is mass of proton and m is mass of electron, then reduced mass of hydrogen atom is

Options:

A. Zero

B. m/(1+m/M)

C. m(1+M/m)

D. m/(1-m/M)

Answer: m/(1+m/M)

1008.

Question: In centre of mass frame of reference

Options:

A. The momentum of each particle of system is zero.

B. The kinetic energy of system never be conserved.

C. The total linear momentum of particles of system is zero.

D. A pseudo force must act as this is always non-inertial frame.

Answer: The total linear momentum of particles of system is zero.

1009.

Question: The band width required for TV signal transmission is approximately

Options:

A. 300 Hz

B. 20 kHz

C. 6 MHz

D. 600 MHz

Answer: 6 MHz

1010.

Question: In low driving frequency condition, the amplitude of forced oscillator depends upon

Options:

A. amplitude of driving force only

B. amplitude of driving force and force constant

C. damping force and mass of oscillator

D. damping force and force constant

Answer: amplitude of driving force and force constant

1011.

Question: The amplitude of progressive wave is A and its angular frequency is ω. The expression for energy density of the wave is (Here ρ – Density of medium, v - velocity of wave)

Options:

A. $(1/2)\rho\omega^2 A^2$

B. $(1/2)\rho v^2 A^2$

C. $(1/2)\rho v\omega^2 A$

D. $(1/2)\rho v^2 A$

Answer: $(1/2)\rho\omega^2 A^2$

1012.

Question: A steel wire 0.72 m long has a mass of 5.0 x 10^{-3} kg. If the wire is under a tension of 60 N, the speed of transverse waves on the wire is about

Options:

A. 9.3 ms^{-1}

B. 93 ms^{-1}

C. 111 ms^{-1}

D. 201 ms^{-1}

Answer: 93 ms^{-1}

1013.

Question: The mean free path of gas molecule is proportional to xth power of number density and yth power of diameter of molecule. Here x and y are

Options:

A. $x = 1, y = -2$

B. $x = 1, y = 2$

C. $x = -1, y = -2$

D. $x = -1, y = 2$

Answer: $x = -1, y = -2$

1014.

Question: The amplitude of a oscillator of frequency 300 oscillations per second, reduce to 1/10th of its initial value after 3000 oscillations. The damping coefficient of oscillator is

Options:

A. 2.3 s^{-1}

B. 0.23 s^{-1}

C. 0.023 s^{-1}

D. 1.08 s^{-1}

Answer: 0.23 s^{-1}

1015.

Question: Two waves having intensity in the ratio 25:4 produce interference. The ratio of the maximum to the minimum intensity is

Options:

A. 5:2

B. 7:3

C. 49:9

D. 125:8

Answer: 49:9

1016.

Question: In a Young's double slit experiment, the wavelength of light is λ and distance between two sources (slits) is d. If the screen is moved away from the plane of the slits, the angular separation of the fringe

Options:

A. increases

B. decreases

C. may increase or decrease

D. remains constant

Answer: remains constant

1017.

Question: Choose the property which changes in general for superconductivity transitions of metals.

Options:

A. X Ray diffraction pattern

B. Elastic properties

C. Specific heat

D. Photoelectric properties

Answer: Specific heat

1018.

Question: The total number of possible wave functions in any energy band for a linear crystal of length L is equal to (Here N = Number of unit cells)

Options:

A. $N/2$

B. N

C. N^2

D. $N^2/2$

Answer: N

1019.

Question: The root mean square speed of oxygen molecules is v. If the temperature is doubled and the oxygen molecules dissociate into oxygen atoms, the root mean square speed will become

Options:

A. $v/\sqrt{2}$

B. v

C. $v\sqrt{2}$

D. 2v

Answer: 2v

1020.

Question: The bond order of O_2^+, O_2^-, O_2 and O_2^{2-} will be respectively :

Options:

A. 1.5, 2.5, 2.0 and 1.0

B. 2.0, 2.5, 1.5 and 1.0

C. 2.5, 1.5, 2.0 and 1.0

D. 2.5, 2.0, 1.5 and 1.0

Answer: 2.5, 1.5, 2.0 and 1.0

1021.

Question: The packing efficiency in simple cubic, body centred cubic and cubic closed packed lattice is respectively :

Options:

A. 52.4%, 68% and 74%

B. 52.4%, 74% and 68%

C. 74%, 68% and 52.4%

D. 68%, 52.4% and 74%

Answer: 52.4%, 68% and 74%

1022.

Question: The property of liquid among the following which increases with increase in temperature is

Options:

A. Vapour pressure

B. Viscosity

C. Surface tension

D. None of these

Answer: Vapour pressure

1023.

Question: The correct order of hybridisation of the central atom in the following species: NH_4^+, PCl_5, SF_6 and $[Pt(Cl)_4]^{2-}$ is:

Options:

A. sp^3, sp^3d^2, sp^3d and dsp^2

B. dsp^2, sp^3, sp^3d and sp^3d^2

C. sp^3, sp^3d, sp^3d^2 and dsp^2

D. dsp^2, sp^3d, sp^3 and sp^3d^2

Answer: sp^3, sp^3d, sp^3d^2 and dsp^2

1024.

Question: Two elements are represented as $^{38}_{18}X$ and $^{80}_{35}Y$, the ratio of neutrons present in the atoms of these elements is

Options:

A. 1:2

B. 4:9

C. 4:8

D. 2:4

Answer: 4:9

1025.

Question: Set of Inner orbital complex among the following is :

Options:

A. $[CoF_6]^{3-}$, $[FeF_6]^{3-}$, $[MnCl_6]^{3-}$

B. $[MnCl_6]^{3-}$, $[Mn(CN)_6]^{3-}$, $[CoF_6]^{3-}$

C. $[MnCl_6]^{3-}$, $[Co(NH_3)_6]^{3+}$, $[FeF_6]^{3-}$

D. $[Co(NH_3)_6]^{3+}$, $[Mn(CN)_6]^{3-}$, $[Fe(CN)_6]^{3-}$

Answer: $[Co(NH_3)_6]^{3+}$, $[Mn(CN)_6]^{3-}$, $[Fe(CN)_6]^{3-}$

1026.

Question: $[Cr(H_2O)_6]Cl_3$ and $[Cr(H_2O)_5Cl]Cl_2.H_2O$ exhibits :

Options:

A. Linkage Isomerism

B. Coordination Isomerism

C. Ionisation Isomerism

D. Hydrate Isomerism

Answer: Hydrate Isomerism

1027.

Question: The correct order of first ionisation enthalpy value for elements of II period is :

Options:

A. $B < Be < C < O < N$

B. $Be < B < N < C < O$

C. $Be < B < C < N < O$

D. $Be < B < O < N < C$

Answer: $B < Be < C < O < N$

1028.

Question: The period and group number of an element having outermost electronic configuration $4d^4 5S^1$ are respectively

Options:

A. 3,4

B. 4,3

C. 4,5

D. 5,5

Answer: 5,5

1029.

Question: The sulphide among the following has the highest solubility product is :

Options:

A. PbS

B. CdS

C. CuS

D. ZnS

Answer: ZnS

1030.

Question: The basicity of Orthophosphorous acid is

Options:

A. 1

B. 3

C. 4

D. 2

Answer: 2

1031.

Question: The Geometry of ClF_3 is :

Options:

A. Trigonal bipyramidal

B. Square planar

C. T - shape

D. Square pyramidal

Answer: T - shape

1032.

Question: Correct statement for Adiabatic process is

Options:

A. $q = + W$

B. $q = 0$

C. $\Delta E = q$

D. $PAV = 0$

Answer: $q = 0$

1033.

Question: Which one of the following is not a natural polymer?

Options:

A. Teflon

B. Starch

C. Protein

D. Cellulose

Answer: Teflon

1034.

Question: The disproportionation redox reaction among the following is :

Options:

A. $N_2(g) + O_2(g) \rightarrow 2NO(g)$

B. $2Pb(NO_3)_2(s) \rightarrow 2PbO(s) + 1/2NO_2(g) + 1/2O_2(g)$

C. $NaH(s) + H_2O(l) \rightarrow NaOH(aq) + H_2(g)$

D. $2NO_2(g) + 2OH^-(aq) \rightarrow NO_2^-(aq) + NO_3^-(aq) + H_2O(l)$

Answer: $2NO_2(g) + 2OH^-(aq) \rightarrow NO_2^-(aq) + NO_3^-(aq) + H_2O(l)$

1035.

Question: The hybridised states of carbon atom in graphite and fullerene (C60) respectively are :

Options:

A. sp and sp^2

B. sp and sp^3

C. sp² and sp³

D. sp² and sp2

Answer: sp² and sp2

1036.

Question: Malachite is an ore of

Options:

A. Aluminium

B. Iron

C. Copper

D. Zinc

Answer: Copper

1037.

Question: The formula of oleum is

Options:

A. H2SO3

B. H2SO4

C. H2S2O8

D. H2S2O7

Answer: H2S2O7

1038.

Question: Neutral oxide among the following is

Options:

A. N2O3

B. N2O4

C. N2O5

D. NO

Answer: NO

1039.

Question: Intensive property among the following is

Options:

A. Mass

B. Volume

C. Heat capacity

D. Pressure

Answer: Pressure

1040.

Question: The compound [A] in the above reaction will be

Options:

A. CCl

B. CHCl

C. CCl

D. C6H5Cl

Answer: C6H5Cl

1041.

Question: Monomer units of polymer Glyptal are

Options:

A. Urea and formaldehyde

B. Phenol and formaldehyde

C. Ethylene glycol and Phthalic acid

D. Ethylene glycol and Terephthalic acid

Answer: Ethylene glycol and Phthalic acid

1042.

Question: The product [A] in the above reaction is:

Options:

A. CH3-CHO

B. CH3-CH-CH-CH3

C. OH OH

D. CH3COOH

E. CH2-CH2-CH2-CH2

F. OH OH

Answer: CH3-CH-CH-CH3 OH OH

1043.

Question: Example of Fibrous protein is

Options:

A. Haemoglobin

B. Albumin

C. Insulin

D. Keratin

Answer: Keratin

1044.

Question: Non-reducing sugar among the following is :

Options:

A. Glucose

B. Maltose

C. Lactose

D. Sucrose

Answer: Sucrose

1045.

Question: The above reaction is :

Options:

A. Electrophilic addition reaction

B. Electrophilic substitution reaction

C. Nucleophilic addition reaction

D. Free radical addition reaction

Answer: Electrophilic addition reaction

1046.

Question: Nitrogenous base present in RNA is

Options:

A. Adenine, Guanine, Cytosine, Thymine

B. Adenine, Thymine, Cytosine, Urasil

C. Adenine, Guanine, Thymine, Urasil,

D. Adenine, Urasil, Guanine, Cytosine

Answer: Adenine, Urasil, Guanine, Cytosine

1047.

Question: Antifertility drug among the following is

Options:

A. Chloroxylenol

B. Norethindrone

C. Terpineol

D. Chloramphenicol

Answer: Norethindrone

1048.

Question: The disease caused by excessive nitrates (Above 50 ppm) in drinking water is:

Options:

A. Pernicious anaemia

B. Xerophthalmia

C. Osteomalacia

D. Methemoglobinemia

Answer: Methemoglobinemia

1049.

Question: The Geometry of $XeOF_4$ molecule is :

Options:

A. Square pyramidal

B. Octahedral

C. Square planar

D. Tetrahedral

Answer: Square pyramidal

1050.

Question: Porphyrin used for oxygen storage in muscle tissue is

Options:

A. Haemoglobin

B. Myoglobin

C. Ferredoxin

D. Cytochrome

Answer: Myoglobin

1051.

Question: The set of coloured ions among the following is

Options:

A. V^{3+}, Ti^{4+}, Mn^{3+}

B. Sc^{3+}, Mn^{3+}, Ti^{4+}

C. Ti^{3+}, Cr^{3+}, V^{3+}

D. Ti^{3+}, Zn^{2+}, Cr^{2+}

Answer: Ti^{3+}, Cr^{3+}, V^{3+}

1052.

Question: Deficiency of which vitamin causes pernicious anaemia disease ?

Options:

A. Vitamin B_1

B. Vitamin B2

C. Vitamin B6

D. Vitamin B12

Answer: Vitamin B12

1053.

Question: The most effective cation to coagulate the negatively charged colloid of Sb2S3 is

Options:

A. Ba2+

B. Ca2+

C. A/3+

D. Na+

Answer: A/3+

1054.

Question: Most acidic compound among the following is

Options:

A. o-Nitrophenol

B. m- Nitrophenol

C. p- Nitrophenol

D. o-Cresol

Answer: p- Nitrophenol

1055.

Question: Weakest base among the following is :

Options:

A. CH3-CH2-NH2

B. (CH3-CH2)2 NH

C. (CH3CH2)3 N

D. C6H5-NH2

Answer: C6H5-NH2

1056.

Question: The compound which gives Cannizzaro's reaction is

Options:

A. CH3-CHO

B. CH3-CH2-CHO

C. C6H5CH2-CHO

D. CH3CHO

Answer: C6H5CH2-CHO

1057.

Question: Rate constant for first order reaction is 6.93 x 10-3s-1. The half life of the reaction will be

Options:

A. 10 s

B. 1000 s

C. 1s

D. 100 s

Answer: 100 s

1058.

Question: The order of reactivity of alkyl halides towards S_n2 reactions is :

Options:

A. (CH3)3C-Br<(CH3)2CH-Br <CH3-CH2-Br < CH3- Br

B. CH3- Br < CH3 - CH2 - Br < (CH3)2CH-Br<(CH3)3C - Br

C. (CH3)3C - Br <CH3-Br<CH3 -CH2-Br < (CH3)2 CH – Br

D. CH3-CH2- Br < CH3- Br < (CH3)2CH-Br< (CH3)3C-Br

Answer: (CH3)3C-Br<(CH3)2CH-Br <CH3-CH2-Br < CH3- Br

1059.

Question: Electronic configuration of Curium (Cm) is [Z = 96]

Options:

A. $[Rn]\ 5f^7\ 6d^1\ 7s^0$

B. $[Rn]\ 5f^7\ 6d^0\ 7s^2$

C. $[Rn]\ 5f^7\ 6d^1\ 7s^2$

D. $[Rn]\ 5f^7\ 6d^0\ 7s^1$

Answer: $[Rn]\ 5f^7\ 6d^1\ 7s^2$

1060.

Question: 2.00 g of a non-electrolyte solute dissolved in 100 g of benzene lowered the freezing point of benzene by 0.40 K. The freezing point depression constant of benzene is 5.12 K kg mol^{-1}. Molar mass of the solute will be

Options:

A. 250 g mol^{-1}

B. 252 g mol^{-1}

C. 256 g mol^{-1}

D. 258 g mol^{-1}

Answer: 256 g mol^{-1}

1061.

Question: The correct order for the energy required for various transitions is

Options:

A. $\sigma \to \sigma^* > n \to \sigma^* > \pi \to \pi^* > \eta$ - π^*

B. $\pi \to \pi^* > n \to \sigma^* > n \to \pi^* > \sigma \to \sigma^*$

C. $\sigma \to \sigma^* > \pi \to \pi^* > \eta \to \sigma^* > \eta - \pi^*$

D. $\eta \to \pi^* > \sigma \to \sigma^* > n \to \sigma^* > \pi \to \pi^*$

Answer: $\sigma \to \sigma^* > n \to \sigma^* > \pi \to \pi^* > \eta - \pi^*$

1062.

Question: The molar conductances of sodium acetate, hydrochloric acid and sodium chloride at infinite dilution are 91.00, 426.16 and 126.45 S cm² mol⁻¹ respectively at 25 °C. The molar conductance at infinite dilution for acetic acid will be

Options:

A. 266.01 S cm² mol⁻¹

B. 450.71 S cm² mol⁻¹

C. 390.71 S cm² mol⁻¹

D. 395.71 S cm² mol⁻¹

Answer: 390.71 S cm² mol⁻¹

1063.

Question: Pribnow box essential for transcription is found in

Options:

A. Eukaryotic DNA

B. Prokaryotic DNA

C. Viral DNA

D. All of these

Answer: Prokaryotic DNA

1064.

Question: Which of the following polysaccharides is the most abundant organic substance on earth ?

Options:

A. Chitin

B. Starch

C. Cellulose

D. Inulin

Answer: Cellulose

1065.

Question: In relation to the vascular bundle of the monocot stem, select the correct answer with the help of the following:
a. Irregular arrangement in ground tissues.
b. Not enclosed by a clear bundle sheath.
c. Conjoint, collateral and closed

Options:

A. a, b and c

B. a and c

C. a and b

D. b and c

Answer: a and c

1066.

Question: Match the structures given in column-I respect to their function given in column-II and choose the correct answer from given codes :
Column - I
a. Nucleosome
b. Termination codon
c. Helicase
d. DNA ligase
Column - II
i. Termination of polypeptide chain
ii. Binding DNA strands
iii. Repeating unit of chromatin
iv. Breaking of hydrogen bonds between double strands of DNA

Options:

A. iii i iv ii

B. iii i ii iv

C. i ii iv iii

D. ii i iii iv

Answer: iii i iv ii

1067.

Question: Three cells A, B and C are joined in linear manner. Demonstrate the direction of movement of water in them.
A B C
OP=50 OP=40 OP=30
TP=45 TP=30 TP=23

Options:

A. A→B→C

B. A→B← C

C. A←B←C

D. A←B→C

Answer: A→B←C

1068.

Question: Which of the following is a flowering plant with nodules containing filamentous nitrogen fixing micro-organisms?

Options:

A. Crotolaria juncea

B. Cicer arietinum

C. Casuarina equisetifolia

D. Cycas revoluta

Answer: Casuarina equisetifolia

1069.

Question: Assertion: Biosynthetic phase of photosynthesis is known as Dark Reaction. Reason: It takes place in absence of light.

Options:

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

Answer: If Assertion is true, but Reason is false.

1070.

Question: Which family has special features of having superior ovary with swollen placenta and oblique twisting of the ovary with axile placentation ?

Options:

A. Brassicaceae

B. Solanaceae

C. Malvaceae

D. Leguminosae

Answer: Solanaceae

1071.

Question: Consider the following statements :
i. All enzymes are proteins which catalyse biochemical reactions in the cells.
ii. Enzymes exhibit substrate specificity.
iii. Enzymes are denatured at high temperatures.
iv. Enzymes enhance the rate of the reactions by increasing the activation energy of reactions.
Which of these statements are correct?

Options:

A. i and ii

B. ii and iii

C. iii and iv

D. iv and i

Answer: ii and iii

1072.

Question: Which one of the following is incorrectly matched ?

Options:

A. Abscisic acid : Controls stomatal closure

B. Ethylene : Accelerates fruit ripening

C. Cytokinins : Delay of senescence

D. Gibberellins : Causes tropic movements

Answer: Gibberellins : Causes tropic movements

1073.

Question: Non-ionising radiations damaging DNA are

Options:

A. Gamma rays

B. X-rays

C. Beta rays

D. UV rays

Answer: UV rays

1074.

Question: Intervertebral discs are composed of

Options:

A. Elastic cartilage

B. White fibrous cartilage

C. Hyaline cartilage

D. None of these

Answer: White fibrous cartilage

1075.

Question: The end product of Tri Carboxylic Acid cycle is :

Options:

A. CO2 and water

B. CO2 and NADH

C. NADH and FADH2

D. CO2, NADH and FADH2

Answer: CO2, NADH and FADH2

1076.

Question: The function of the prolactin hormone is :

Options:

A. Production of pigment

B. Development of mammary gland

C. Reabsorption of water

D. Secretion of androgen and testosterone

Answer: Development of mammary gland

1077.

Question: Repolarisation of Neurons occurs due to :

Options:

A. Efflux of Na^+

B. Efflux of K+

C. Influx of Na^+

D. Influx of K+

Answer: Efflux of K+

1078.

Question: Origin of heart beat and its conduction is represented by

Options:

A. SA node → Purkinje fibres AV node → Bundle of His

B. AV node → Bundle of His → SA node → Purkinje fibres

C. SA node → AV node → Bundle of His → Purkinje fibres

D. Purkinje fibres → AV node → SA node → Bundle of His

Answer: SA node → AV node → Bundle of His → Purkinje fibres

1079.

Question: Which pair is not correctly matched in relation to earthworm?

Options:

A. Male genital aperture - 18th segment

B. Nephridiopores – All segments

C. Spermathecal apertures – 5th to 9th segments

D. Oesophagus – 5th to 7th segments

Answer: Nephridiopores – All segments

1080.

Question: What type of human population is represented by the following age pyramid ?

Options:

A. Stable population

B. Declining population

C. Expanding population

D. Vanishing population

Answer: Expanding population

1081.

Question: The type of sex determination in moths and butterflies is:

Options:

A. XX-XO

B. XX-XY

C. ZO-ZZ

D. ZW-ZZ

Answer: ZW-ZZ

1082.

Question: Polymerase Chain Reaction (PCR) and Restriction Fragment Length Polymorphism (RFLP) are the methods for

Options:

A. Genetic fingerprinting

B. DNA sequencing

C. Genetic transformation

D. Enzyme study

Answer: Genetic fingerprinting

1083.

Question: Metameric segmentation is the characteristic of

Options:

A. Annelida and Arthropoda

B. Echinodermata and Arthropoda

C. Annelida and Chordata

D. Platyhelminthes and Arthropoda

Answer: Annelida and Arthropoda

1084.

Question: Which group of plants have embryo but no vascular tissue?

Options:

A. Cyanophyta

B. Pteridophyta

C. Tracheophyta

D. Bryophyta

Answer: Bryophyta

1085.

Question: In highly telolecithal egg, the usual type of cleavage is :

Options:

A. Equal Holoblastic

B. Unequal Holoblastic

C. Discoidal Meroblastic

D. Superficial Meroblastic

Answer: Discoidal Meroblastic

1086.

Question: Match the following and find the correct combination.
Column - I
a. De Vries
b. Pasteur
c. Darwin
d. Fox
Column - II
p. Special Creation
q. Swan-Necked Flask Experiment
r. Protobiosis
s. Origin of Species
t. Mutation theory

Options:

A. t p q s

B. p q r t

C. t q s r

D. p r s q

Answer: t q s r

1087.

Question: Which one of the following Algae is correctly matched with its reserve food?

Options:

A. Volvox: Mannitol

B. Ectocarpus : Starch

C. Polysiphonia : Floridean starch

D. Vaucheria: Volutin granules

Answer: Polysiphonia : Floridean starch

1088.

Question: Fungi which requires two different hosts to complete its life cycle is called as:

Options:

A. Heterothallic

B. Autoecious

C. Dioecious

D. Heteroecious

Answer: Heteroecious

1089.

Question: Select the correct code by match the following:
Disease
a. White rust of Crucifer
b. Tikka disease of groundnut
c. Green ear disease of bajra
d. Red rust of sugarcane
Causal Organism
i. Colletotrichum falcatum
ii. Albugo candida
iii. Cercospora arachidicola
iv. Sclerospora graminicola

Options:

A. iii iv iii

B. ii iii iv i

C. ii iii i iv

D. i ii iii iv

Answer: ii iii iv i

1090.

Question: Which of the following group has sporophytic plant body with only trachieds in xylem, sieve tubes in phloem and no cambium ?

Options:

A. Bryophytes

B. Pteridophytes

C. Gymnosperms

D. Angiosperms

Answer: Pteridophytes

1091.

Question: Which of the following is not a virus borne disease?

Options:

A. Little leaf of brinjal

B. Yellow vein mosaic of bhindi

C. Bunchy top of banana

D. Leaf curl of papaya

Answer: Little leaf of brinjal

1092.

Question: Which of the following is not essential for evolution of seed habit ?

Options:

A. Heterospory

B. Reduction of a free living female gametophyte

C. Freedom from compulsion of water for sexual reproduction

D. Megaspore is not persistently stable in megasporangium.

Answer: Megaspore is not persistently stable in megasporangium.

1093.

Question: Which of the economically important plants are members of the same family?

Options:

A. Liquorice and Cotton

B. Coriander and Asafoetida

C. Cotton and Jute

D. Opium and Asafoetida

Answer: Coriander and Asafoetida

1094.

Question: Which of the following modes of reproduction cannot be kept under Apomixis?

Options:

A. Parthenogenesis

B. Apogamy

C. Apospory

D. Sporophytic budding

Answer: Sporophytic budding

1095.

Question: Match the sub-stages of Prophase-I (Column-I) with related phenomenon (Column-II) occurring in it and choose the correct code :
Column - I
a. Pachytene
b. Zygotene
c. Diplotene
d. Diakinesis
Column - II
i. Chiasma
ii. Crossing Over
iii. Degradation of Nuclear membrane
iv. Synapsis

Options:

A. i ii iii iv

B. ii iii i iv

C. ii iv i iii

D. i iv ii iii

Answer: ii iv i iii

1096.

Question: Which of the following pairs are correctly matched ?
(a) Relay pump theory: Godlewaski
(b) Cohesion Tension : Sir. J.C. Bose Theory
(c) Starch Sugar : J.D. Sayre Hypothesis
(d) Theory of : Stephan Capillarity Hales
Select the Correct Code :

Options:

A. (a), (b) and (c)

B. (a), (c) and (d)

C. (b) and (d)

D. (a) and (c)

Answer: (a) and (c)

1097.

Question: First electron acceptor of photosystem-II is :

Options:

A. Ferrodoxin

B. Quinone

C. Pheophytin

D. Plastoquinone

Answer: Pheophytin

1098.

Question: In electron transport chain during respiration oxidation of one molecule of NADH gives rise to how many molecules of ATP ?

Options:

A. 2

B. 3

C. 24

D. 36

Answer: 3

1099.

Question: Which of the following structures represents the peptide chain?

Options:

A. -N-C-C-C-C-N-C-C-C-

B. 0

C. H

D. H

E. H 0

F. -N-C-C-N-C-C-N-C-C-

G. -----

H. 0

I. 0

J. -N-C-N-C-NH-C-NH-

K. OH

L. H

M. 0

N. H

O. -----

P. -N-C-C-C-N-C-C-N-C-C-C-

Q. H

R. 0

Answer: H H H 0 -N-C-C-N-C-C-N-C-C- ----- 0 0

1100.

Question: A plant whose stem contains both included phloem and internal phloem :

Options:

A. Leptadenia pyrotechnica

B. Salvadora persica

C. Chenopodium murale

D. Achyranthes aspera

Answer: Leptadenia pyrotechnica

1101.

Question: Observe the following statements and choose the correct answer:
a. Charles Febry and Henri Buisson discovered the ozone layer.
b. National Ozone Center is situated in New Delhi.
c. Chlorofluorocarbon is the main cause of ozone depletion.

Options:

A. a and c

B. a and b

C. b and c

D. a, b and c

Answer: a, b and c

1102.

Question: Match the Wildlife Sanctuary (List-I) with related District (List-II) and choose right answer from codes as given below :
List - I
a. Ramgarh Vishdhari
b. Jamva Ramgarh
c. Sajjangarh
d. Bassi
List - II
i. Udaipur
ii. Chittorgarh
iii. Bundi
iv. Jaipur

Options:

A. i iv iii ii

B. iv i ii iii

C. iii iv i ii

D. iii ii i iv

Answer: iii iv i ii

1103.

Question: Plasmodium enters the human body as

Options:

A. Ookinete

B. Sporozoites

C. Trophozoite

D. Gamotocyte

Answer: Sporozoites

1104.

Question: PGR of which of the following chemical nature is helpful in wine production?

Options:

A. Terpenes

B. Carotenoid derivative

C. Adenine derivative

D. Indole compound

Answer: Terpenes

1105.

Question: In mammals the function of allantois during development of embryo is

Options:

A. To protect the embryo from dehydration

B. To act as cushions for any mechanical shocks

C. To nourish the developing embryo

D. To rid the developing embryo of carbon dioxide and nitrogenous wastes

Answer: To rid the developing embryo of carbon dioxide and nitrogenous wastes

1106.

Question: The highest level of cognitive domain is

Options:

A. Knowledge

B. Evaluation

C. Synthesis

D. Comprehension

Answer: Evaluation

1107.

Question: Which of the following version of Biological Science Curriculum Study Project (BSCS) approaches the study of biology from ecological and behavioural aspect ?

Options:

A. Blue version

B. Yellow version

C. Green version

D. Red version

Answer: Green version

1108.

Question: Which of the following is the other name of concept mapping ?

Options:

A. Mind Maps

B. Visual diagram

C. Word mapping

D. Knowledge diagram

Answer: Knowledge diagram

1109.

Question: Coupling and repulsion hypothesis which are two aspects of the phenomenon called linkage, was explained by :

Options:

A. Mendel in Garden pea

B. Bateson in Sweet pea

C. Morgan in Drosophila

D. Hutchinson in Maize

Answer: Morgan in Drosophila

1110.

Question: Which of the following pairs is not correctly matched ?

Options:

A. Inductive J.S. Bruner learning

B. Taxonomy of W.H. Kilpatric Educational Objectives

C. Concept Joseph D. Nova Mapping

D. Heuristic H.E. Armstrong Method

Answer: Taxonomy of W.H. Kilpatric Educational Objectives

1111.

Question: The method of science teaching in which teacher moves from general to specific is called as :

Options:

A. Inductive method

B. Lecture method

C. Deductive method

D. Experimental method

Answer: Deductive method

1112.

Question: Which of the following characteristics is not correct about lesson plan ?

Options:

  A. It is developed by students.

  B. It helps in orderly presentation of contents.

  C. It saves from haphazard teaching.

  D. It develops confidence.

Answer: It is developed by students.

1113.

Question: Which of the following point is not the advantage of team teaching?

Options:

  A. Better utilization of resources

  B. Better planning

  C. Better use of teaching techniques

  D. Better financial benefits of teachers

Answer: Better financial benefits of teachers

1114.

Question: Which of the following is not a characteristic of scientific attitude?

Options:

  A. Curiosity

  B. Intellectual honesty

  C. Faith in cause and effect relationship

  D. Faith in superstition

Answer: Faith in superstition

1115.

Question: Which of the following is not the technical characteristics of a good test is ?

Options:

  A. Discrimination

  B. Validity

  C. Objectivity

  D. Cost effectiveness

Answer: Cost effectiveness

1116.

Question: NCF 2005 draws attention on which of the following other curriculum areas:
A. The Art and Heritage craft
B. Health and Physical Education
C. Peace Education
Following are the groups of codes by using mentioned above which group of codes is best appropriate correct group?
Codes:

Options:

  A. Only A and B

  B. Only B and C

  C. Only A and C

  D. A, B and C

Answer: A, B and C

1117.

Question: After completing an experiment in science laboratory, all material waste should be

Options:

  A. left at your table for the next class.

  B. dumped into the sink.

  C. disposed off according to teacher's direction.

  D. to be taken home.

Answer: disposed off according to teacher's direction.

1118.

Question: National Policy on Education, 1986 was reviewed by which Committee ?

Options:

  A. Ishwar Bhai Patel Committee

  B. Ramamurti Committee

  C. Adiseshiah Committee

  D. Sampurnanand Committee

Answer: Ramamurti Committee

1119.

Question: The cone of experience developed by Edger Dale is related to

Options:

  A. Co-curricular activities

  B. Geometrical measurement

  C. Laboratory construction

  D. Appropriate use of teaching aids

Answer: Appropriate use of teaching aids

1120.

Question: Which of the following is not the principle of programmed instruction?

Options:

A. Principle of self pacing

B. Principle of immediate confirmation

C. Principle of big steps

D. Principle of active responding

Answer: Principle of big steps

1121.

Question: Objectives of the organisation of Science Club in schools are as follows:
A. To develop scientific attitude
B. To cultivate the leadership qualities
C. To develop scientific interest
D. To bring awareness for environmental study.
Following are the groups of codes as mentioned above, select the most appropriate correct group of codes :
Codes:

Options:

A. Only A and C

B. Only A, C and D

C. Only B and D

D. A, B, C and D

Answer: A, B, C and D

1122.

Question: Co-Scholastic areas of Continuous and Comprehensive Evaluation (CCE) includes :
A. Life Skills
B. Work Education
C. Visual and Performing Arts
D. Attitude and Values
Following are the groups of codes as mentioned above, select the most appropriate group.

Options:

A. A, B and C

B. A, B, C and D

C. A, B and D

D. A, C and D

Answer: A, B, C and D

1123.

Question: Which of the following is not the principle of curriculum organisation?

Options:

A. Principle of teacher centeredness

B. Principle of correlation

C. Principle of totality of experiences

D. Principle of flexibility

Answer: Principle of teacher centeredness

1124.

Question: Which of the following teaching strategies is a democratic teaching strategy?

Options:

A. Project strategy

B. Explanation strategy

C. Programmed Instruction

D. Illustration strategy

Answer: Project strategy

1125.

Question: Which of the following is most appropriate characteristics in context of constructivist approach in Science teaching?

Options:

A. Providing additional academic help to only weaker students.

B. Applying different formulae in solving problems.

C. Providing experiential learning to students.

D. Providing more and more study material to students.

Answer: Providing experiential learning to students.

1126.

Question: Arrange the steps of Scientific Method in correct sequence :
i. Analyzing data
ii. Selection of problem
iii. Testing the hypothesis
iv. Drawing conclusion
v. Formulation of hypothesis
Codes:

Options:

A. ii → iii → v → i → iv

B. ii → i → iv → iii → v

C. ii → v → iii → i → iv

D. iii → ii → v → iv → i

Answer: ii → v → iii → i → iv

1127.

Question: The value of (A+B) x (A-B) is

Options:

A. 0 (zero)

B. A^2-B^2

C. A x B

D. 2(B x A)

Answer: 2(B x A)

1128.

Question: If the velocity of a particle is v = At + Bt², where A and B are constants, then the distance travelled by it between 1s and 2s is

Options:

A. A/3 + B/2

B. 3A/2 + 4B/3

C. 3A + 7B

D. 7A/2 + 7B/3

Answer: 3A/2 + 7B/3

1129.

Question: A dart is thrown horizontally towards X at 20 m/s as shown. It hits Y, 0.1s later. The distance XY is (Take g = 10 m/s²)

Options:

A. 0.05 m

B. 1 m

C. 0.5 m

D. 0.1 m

Answer: 0.05 m

1130.

Question: Find the acceleration of 3 kg mass when acceleration of 2 kg mass is 2m/s² as shown in figure. (spring is ideal)

Options:

A. 3 m/s²

B. 2 m/s²

C. 0.5 m/s²

D. 5 m/s²

Answer: 2 m/s²

1131.

Question: If the dimensions of a physical quantity are given by M^aL^bT^c, then the physical quantity will be

Options:

A. Force if a = 0, b = −1, c = −2

B. Pressure if a = 1, b = -1, c = -2

C. Velocity if a = 1, b = 0, c = -1

D. Acceleration if a = 1, b = 1, c = -

Answer: Pressure if a = 1, b = -1, c = -2

1132.

Question: A body of mass 4 kg moving with velocity 12 m/s collides with another body of mass 6 kg at rest. If two bodies stick together after collision then the loss of kinetic energy of system is

Options:

A. Zero

B. 288 J

C. 172.8 J

D. 144 J

Answer: 172.8 J

1133.

Question: A uniform solid sphere is rolling without slipling on a surface as shown in figure with a translational velocity v m/s. If it is to climb the inclined surface then v should be

Options:

A. v ≥ √(10gh/7)

B. v ≥ √(10gh/7)

C. v ≥ √(2gh)

D. v ≤ √(2gh)

Answer: v ≥ √(10gh/7)

1134.

Question: Two identical ideal springs are attached to a block of mass m as shown in figure. The period of oscillations of system will be

Options:

A. T = 2π√(m/k)

B. T = 2π√(2m/k)

C. T = 2π√(m/(2k))

D. $T = 2\pi\sqrt{m/(4k)}$

Answer: $T = 2\pi\sqrt{m/(2k)}$

1135.

Question: A spring is stretched by a force. If 10 N force is required to stretch the spring by 1 mm, then work done in stretching the spring through 40 mm is (Assume spring to be ideal)

Options:

A. 23 J

B. 68 J

C. 180 J

D. 8 J

Answer: 8 J

1136.

Question: Substances which can be stretched to cause large strains are called as

Options:

A. Brittle

B. Elastomers

C. Plastic

D. Metals

Answer: Elastomers

1137.

Question: An spherical ball of mass m falls in a viscous liquid with a terminal velocity vo. Another spherical ball, same material of mass 8 m will fall through the same liquid with a terminal velocity of

Options:

A. vo

B. 4 vo

C. 8 vo

D. 27 vo

Answer: 4 vo

1138.

Question: A liquid rises upto a height greater than that for water in given capillary tube. Its reason may be that

Options:

A. the liquid is more viscous than water.

B. the temperature of liquid is higher than that of water.

C. the surface tension of water is less than that of liquid.

D. the surface tension of water is more than that of liquid.

Answer: the surface tension of water is less than that of liquid.

1139.

Question: A Carnot engine whose efficiency is 40% takes in heat from a source at a temperature 500 K. If it is desired to have a Carnot engine of efficiency 60%, then the source temperature for the same sink temperature must be :

Options:

A. 600 K

B. 750 K

C. 1000 K

D. 1200 K

Answer: 750 K

1140.

Question: A satellite of mass m is in a circular orbit of Radius 2RE around the Earth. How much energy is required to transfer it to a circular orbit of radius 4RE? (g-acceleration due to gravity)

Options:

A. gmRE/8

B. gmRE/4

C. gmRE/2

D. gmRE

Answer: gmRE/8

1141.

Question: Two stars emit maximum radiation at wavelength 360 nm and 480 nm respectively. The ratio of their temperatures is

Options:

A. 1:2

B. 3:4

C. 4:3

D. 2:1

Answer: 4:3

1142.

Question: It is found that a glass lens of refractive index n_1 disappears in a trough of liquid of refractive index n_2. The correct relation between n_1 and n_2 is

Options:

A. $n_1 = n_2$

B. $n_1 < n_2$

C. $n_1 > n_2$

D. Information is insufficient.

Answer: $n_1 = n_2$

1143.

Question: If E_0 and V_0 are electrostatic field and electrostatic potential on the surface of a conductor respectively, then choose correct statement for these quantities over the volume of conductor.

Options:

A. E_0 is constant, V_0 is variable.

B. E_0 is non-zero everywhere in entire volume.

C. V_0 is throughout constant in the conductor.

D. V_0 varies from centre to surface of conductor.

Answer: V_0 is throughout constant in the conductor.

1144.

Question: The equivalent capacitance of the combination, as shown in figure, between A and B is

Options:

A. 1 μF

B. 2 μF

C. 4 μF

D. 5/3 μF

Answer: 2 μF

1145.

Question: The average degrees of freedom per molecule for a gas is 8. The gas performs 20 J of work when it expands at constant pressure. The heat absorbed by the gas is

Options:

A. 50 J

B. 100 J

C. 150 J

D. 200 J

Answer: 100 J

1146.

Question: the mineral which is essential for absorption and maintaining balance of body fluids is -

Options:

A. iron

B. calcuim

C. sodium

D. chlorine

Answer: sodium

1147.

Question: Exoskeleton of Periplaneta is made up of -

Options:

A. calcium carbonate

B. cutin

C. chitin

D. mucous

Answer: chitin

1148.

Question: the term " genetics" was given by -

Options:

A. mendel

B. morgan

C. bateson

D. boveri

Answer: bateson

1149.

Question: the correct sequence of cell stages during spermatogenesis is-

Options:

A. spermatogonia --> spermatocytes --> spermatids--> spermatozoa

B. spermatogonia --> spermatids -->spermatocytes --> spermatozoa

C. spermatocytes --> spermatogonia --> spermatids--> spermatozoa

D. spermatocytes --> spermatids-->spermatogonia --> spermatozoa

Answer: spermatogonia --> spermatocytes --> spermatids--> spermatozoa

1150.

Question: pseudocoelom is present in-

Options:

A. platyhelminthes

B. aschelminthes

C. annelida

D. coelenterata

Answer: aschelminthes

1151.

Question: which cell organelle helps in the formation of acrosome ?

Options:

A. mitochondria

B. golgi complex

C. ribosomes

D. chloroplast

Answer: golgi complex

1152.

Question: scurvy disease is due to the deficiency of-

Options:

A. vitamin a

B. vitamin d

C. vitamin b

D. vitamin c

Answer: vitamin c

1153.

Question: father of phycology is -

Options:

A. f.e.fritsch

B. m.o.p. iyengar

C. m.s. randhawa

D. g.smith

Answer: f.e.fritsch

1154.

Question: which of the following is not a tracheophyta ?

Options:

A. angiosperm

B. gymnosperm

C. pteridophyta

D. bryophyta

Answer: bryophyta

1155.

Question: in which of the following feature does the angiosperms resemble with the gymnosperms ?

Options:

A. presence of ovary

B. presence of ovule

C. ploidy of endosperm

D. double fertilisation

Answer: presence of ovule

1156.

Question: cremocarp type of fruit is present in -

Options:

A. nutmeg

B. fennel

C. clove

D. mace

Answer: fennel

1157.

Question: the formation of embryo from egg cell without fertilisation is called as -

Options:

A. parthenocarpy

B. parthenogenesis

C. polyembryony

D. xenia

Answer: parthenogenesis

1158.

Question: el nino happens because -

Options:

A. trade winds make the water cold

B. trade winds weakens which does not bring up cold water

C. trade winds strengthen which brings up warm ocean water

D. trade winds strengthen which does not bring up the cold water

Answer: trade winds weakens which does not bring up cold water

1159.

Question: which one is not the exotic species in rajasthan ?

Options:

A. Lantana camara

B. Prosopis cineraria

C. Parthenium hysterophorous

D. Eucalyptus globulus

Answer: Prosopis cineraria

1160.

Question: Which of the following is an example of a C4 plant ?

Options:

A. wheat

B. maize

C. barley

D. oat

Answer: maize

1161.

Question: "golden rice" is rich in -

Options:

A. vitamin a

B. vitamin d

C. vitamin k

D. vitamin b

Answer: vitamin a

1162.

Question: which hormone is administered to a person suffering from a marked fall in blood pressure ?

Options:

A. insulin

B. adrenaline

C. thyroxine

D. vasopressin

Answer: adrenaline

1163.

Question: in cockroach , the organ of taste is -

Options:

A. epipharnyx only

B. hypopharynx only

C. palps and hypopharynx

D. palps and epipharynx

Answer: palps and hypopharynx

1164.

Question: "crossing -over" takes palce in -

Options:

A. pachytene

B. diplotene

C. diakinesis

D. leptotene

Answer: pachytene

1165.

Question: if a population is in genetic equilibrium what will be the rate of evolution ?

Options:

A. zero

B. half

C. double

D. triple

Answer: zero

1166.

Question: seminiferous tubules are separated by -

Options:

A. sertoli cells

B. interstitial cells

C. intercellular fluids

D. lining of the seminiferous tubules

Answer: interstitial cells

1167.

Question: out of the following which statement does not clearly states 'nature of science' :-

Options:

A. science is a process as well as the product of that process

B. in science there is much importance of store house of collected knowledge

C. scientific knowledge is universal

D. in science there is absolute possibilities of generalization of scientific conclusion

Answer: in science there is absolute possibilities of generalization of scientific conclusion

1168.

Question: science cannot be developed without :-

Options:

A. history

B. political science

C. mathematics

D. home science

Answer: mathematics

1169.

Question: concept map ' cannot' be used for:-

Options:

A. planning a lesson

B. revising a lesson

C. summative assessment of a lesson

D. formative assessment of a lesson

Answer: summative assessment of a lesson

1170.

Question: which one of the following statement is not related with guiding principles of " national curriculum framework 2005 ":

Options:

A. connecting knowledge to life outside the school

B. ensuring that learning is shifted away from rote methods.

C. making examinations more complex and difficult

D. enriching the curriculum to provide for overall development of children rather than remain textbook centric.

Answer: making examinations more complex and difficult

1171.

Question: according to bloom's taxonomy of educational objectives the lowest level of cognitive domain is :-

Options:

A. analysis

B. evaluation

C. comprehension

D. knowledge

Answer: knowledge

1172.

Question: lesson planning in science should be guided primarily by the consideration of:

Options:

A. meeting the needs of the average child in the class

B. satisfying parents

C. the curricular goals and learning out comes

D. providing pupils with work

Answer: the curricular goals and learning out comes

1173.

Question: in the reply of the question a student presents his views in favour or against on issue with certain logic and reach to conclusion . what do you call this type of question ?

Options:

A. explanatory question

B. discussion question

C. illustrative question

D. comparative question

Answer: discussion question

1174.

Question: creativity is usually associated with :

Options:

A. convergent thinking

B. divergent thinking

C. modelling

D. imitation

Answer: divergent thinking

1175.

Question: the word 'curriculum' is derived from:-

Options:

A. german language

B. dutch language

C. latin language

D. french language

Answer: latin language

1176.

Question: by which acivity students will acquire understanding through a systematic and direct study of the biological and physical environment:-

Options:

A. science club

B. science fair

C. science laboratory

D. field trip

Answer: field trip

1177.

Question: what is the full form of c.c.e.

Options:

A. continuous and comprehensive examination

B. continuous and comprehensive evalution

C. continuous and competitive evaluation

D. continuous and complex examination

Answer: continuous and comprehensive evalution

1178.

Question: the last frame in linear programmed instruction is:-

Options:

A. practice frame

B. testing frame

C. teaching frame

D. introductory frame

Answer: testing frame

1179.

Question: example of projected teaching aid is :

Options:

A. overhead projector

B. charts

C. flannel board

D. bulletin board

Answer: overhead projector

1180.

Question: which one of the following is not a learner centered method?

Options:

A. project method

B. problem solving method

C. lecture method

D. laboratory method

Answer: lecture method

1181.

Question: a teacher prepares a specific objective in her lesson plan that " students will be able to classify oxides on the basis of properties of solubility " specific objective is :

Options:

A. knowledge

B. understanding

C. analysis

D. synthesis

Answer: understanding

1182.

Question: major out come of science club is :-

Options:

A. creative and organisational capability is developed

B. students get financial benefits

C. parents are benefitted

D. teachers get advantages

Answer: creative and organisational capability is developed

1183.

Question: which one of the following characterstic is not related with scientific attitude:-

Options:

A. faith in superstitions

B. faith in cause and effect relationship

C. open -mindedness

D. spirit of curiosity

Answer: faith in superstitions

1184.

Question: the project method of teaching is best associated with the philosophy of :

Options:

A. roussou

B. spencer

C. dewey

D. froebel

Answer: dewey

1185.

Question: out of the following which method of teaching science follows the thordike's law of learning ?

Options:

A. lecture method

B. lecture- demonstration method

C. project method

D. supervised study method

Answer: project method

1186.

Question: one of the important merits of the objective type test is :-

Options:

A. construction of test items is simple

B. teacher can assess the internal feelings of the student

C. linguistic problem of students can be identified

D. it is possible to cover entire content

Answer: it is possible to cover entire content

1187.

Question: the dimensional formula for impulse is -

Options:

A. ML2T-1

B. ML2T-2

C. MLOT-2

D. MLT-1

Answer: MLT-1

1188.

Question: two unit vectors are inclined at an angle, so that their resultant is also a unit vector. the angle is -

Options:

A. 30°

B. 60°

C. 120°

D. 150°

Answer: 120°

1189.

Question: The speed time graph of a particle moving along a fixed direction is shown as -
The distance traversed by the particle between 0 to 10 sec is -

Options:

A. 120 m

B. 60 m

C. 30 m

D. 20 m

Answer: 60 m

1190.

Question: two masses of 1g and 9g are moving with equal kinetic energy. the ratio of the magnitudes of their respective linear momenta is -

Options:

A. 1:3

B. 3:1

C. 1:9

D. 9:1

Answer: 1:3

1191.

Question: A child is standing at the centre of turntable with his arms stretched then table is rotating about its central axis with angular speed wo. Now the child fold his arms then moment of Inertia of child becomes 1/3 of its initial value. Then angular speed of turntable will be :

Options:

A. 3 wo

B. 1/3 wo

C. 6 wo

D. 1/6 wo

Answer: 3 wo

1192.

Question: the moment of inertia of a thin uniform circular disc about one of its diameter is i . the moment of inertia about an axis perpendicular to the circular surface and passing through its centre is -

Options:

A. $\sqrt{2}$ I

B. 2 I

C. 1/2 I

D. 1/$\sqrt{2}$ I

Answer: 2 I

1193.

Question: the time period of an artificial satellite in a circular orbit of radius r is 4 days. if the time period of another satellite in a circular orbit is 32 days then its radius of orbit will be -

Options:

A. 32 r

B. 16 r

C. 8r

D. 4r

Answer: 4r

1194.

Question: The weights of an object in a coal mine, at sea level and at the top of mountain are W1, W2 and W3 respectively, then :

Options:

A. W1 < W2 < W3

B. W1 > W2 > W3

C. W1 < W2 > W3

D. W1 = W2 = W3

Answer: W1 < W2 > W3

1195.

Question: if the metal bob of a simple pendulum is replaced by a wooden bob, then -

Options:

A. its time period increases

B. its time period decreases

C. its time period remains the same

D. pendulum does not oscillate

Answer: its time period remains the same

1196.

Question: two wires of same material and length but cross sectional area in the ratio 1:2 are used to suspend the same load. the extensions in them will be in the ratio -

Options:

A. 1:2

B. 2:1

C. 4:1

D. 1:4

Answer: 2:1

1197.

Question: The radius of a soap bubble is r. The surface tension of soap solution is T. Keeping temperature constant, the radius of the soap bubble is doubled, the energy necessary for this will be -

Options:

A. 8 πr^2 T

B. 12 πr^2 T

C. 16 πr^2 T

D. 24 πr^2 T

Answer: 24 πr^2 T

1198.

Question: terminal velocity of a falling sphere in a liquid is v . if the radius of sphere is doubled then sphere will fall with a terminal velocity -

Options:

A. 1/4 v

B. 1/2 v

C. 2 v

D. 4 v

Answer: 4 v

1199.

Question: water is flowing through a horizontal pipe of non - uniform cross section. at the extreme narrow portion of the pipe, the water will have :

Options:

A. maximum pressure and least speed.

B. least pressure and maximum speed.

C. both pressure and speed maximum.

D. both pressure and speed least.

Answer: least pressure and maximum speed.

1200.

Question: a real gas behaves like an ideal gas if its -

Options:

A. both pressure and temperature are high

B. both pressure and temperature are low

C. pressure is high and temperature is low

D. pressure is low and temperature is high

Answer: pressure is low and temperature is high

1201.

Question: The temperature of a substance increases by 27°C. On the Kelvin scale this increase is -

Options:

A. 2.46 k

B. 7 k

C. 27 k

D. 300 k

Answer: 27 k

1202.

Question: a quantity of heat q is supplied to a monoatomic ideal gas which expands at constant pressure. the fraction of heat that goes into work done by the gas is -

Options:

A. 2/5

B. 3/5

C. 2/3

D. 1

Answer: 2/5

1203.

Question: A black body is maintained at 27°C and 927°C. The ratio of radiations emitted, will be -

Options:

A. 1:4

B. 1:16

C. 1:64

D. 1:256

Answer: 1:256

1204.

Question: For the wave shown in the figure, if frequency is 150 Hz, then wavelength and velocity are -

Options:

A. 0.04 m, 10 ms-1

B. 0.06 m, 12 m s-1

C. 0.08 m, 12 m s-1

D. 0.08 m, 10 m s-1

Answer: 0.08 m, 12 m s-1

1205.

Question: far point for myopic eye is 50 cm. the nature and power of corrective lens is -

Options:

A. concave, -2 d

B. concave, +2 d

C. convex, -2 d

D. convex, 0.5 d

Answer: concave, -2 d

1206.

Question: an air bubble under water shines bacause of the phenomenon of -

Options:

A. total internal reflection

B. dispersion

C. interference

D. diffraction

Answer: total internal reflection

1207.

Question: a given charge situated at a distance r from an electric dipole on its axis experience a force f. if the distance of the charge from the dipole is doubled, the force acting on the charge will be -

Options:

A. 4f

B. f/8

C. f/4

D. f/2

Answer: f/8

1208.

Question: Two condensors of capacity C and 1/4 C are connected to a battery of V volt, as shown in figure- Then the work done in charging fully both the condensors is

Options:

A. 1/4 CV2

B. 3/4 CV2

C. 8/5 CV2

D. 5/8 CV2

Answer: 5/8 CV2

1209.

Question: In the adjacent figure, the current flowing through 10Ω resistance is:

Options:

A. 0 a

B. 1/5 a

C. 25/7 a

D. 7/25 a

Answer: 0 a

1210.

Question: if an electron enters in a magnetic field with its velocity pointing in the same direction as the magnetic field, then -

Options:

A. the electron will turn to its right

B. the electron will turn to its left

C. the velocity of the electron will remain unchanged

D. the velocity of the electron will increase

Answer: the velocity of the electron will remain unchanged

1211.

Question: An Aeroplane is moving due north with a velocity of 400 km/h. The potential difference in volt between the ends of its wings, distant 40 m from each other will be :
[given:- the earth's magnetic field intensity B = 0.36 * 10-4 Tesla]

Options:

A. 0.153 volt

B. 1.6 volt

C. 0.16 volt

D. 0.016 volt

Answer: 0.16 volt

1212.

Question: The power in AC circuit is given by : P = Erms Irms cosφ
The value of power factor cosφ in series LCR circuit at resonance is :-

Options:

A. 0

B. 1

C. Erms * Irms

D. (Erms* Irms) / √2

Answer: 1

1213.

Question: a diffraction pattern is obtained using a beam of red light. if the red light is replaced by blue light then:

Options:

A. bands disappear altogether

B. bands became broader and farther apart

C. diffraction bands narrower and crowded together

D. diffraction bands remains same

Answer: diffraction bands narrower and crowded together

1214.

Question: the mass of a moving photon is :

Options:

A. hv/c^2

B. hv/c

C. hv

D. zero

Answer: hv/c^2

1215.

Question: In the nucleus of 11Na23 the number of protons, neutrons and electrons are -

Options:

A. 11, 12, 11

B. 11, 12, 0

C. 12, 11,0

D. 23, 12, 11

Answer: 11, 12, 0

1216.

Question: a message signal of frequency 10 khz and peak voltage 10 volt is used to modulate a carrier wave of frequency 1 mhz and peak voltage 20 volt, then modulation index will be -

Options:

A. 0.5

B. 2

C. 10-3

D. 10+3

Answer: 0.5

1217.

Question: a projectile following the usual parabolic trajectory explodes into fragments midway in air due to internal forces. the centre of mass of the system-

Options:

A. follows the same parabolic trajectory

B. moves in the direction of fragments

C. moves with constant velocity

D. moves vertically downward

Answer: follows the same parabolic trajectory

1218.

Question: The maximum and minimum distance of a comet from the Sun are 2.6 X 10^12 m and 5.2 X 10^10 m respectively. When it is farthest to the Sun, its velocity is 4 X 10^4 m s^-1 , then its velocity when nearest to the Sun will be:

Options:

A. 8 X 10^2 m s^-1

B. 3.38 X 10^18 m s^-1

C. 2 X 10^6 m s^-1

D. 4 X 10^4 m s^-1

Answer: 2 X 10^6 m s^-1

1219.

Question: A box of mass 200 gm is attached to one end of a spring whose other end is fixed to a rigid support. The ratio of Q when a mass of 800 gm is placed inside the box to the Q when empty box is with the spring will be:

Options:

A. 2

B. √5

C. 1/2

D. 1/√5

Answer: √5

1220.

Question: in a driven harmonic oscillator power absorbed is maximum at the-

Options:

A. amplitude resonance

B. highest possible driving frequency

C. velocity resonance

D. frequency where the amplitude drops to 1/e of its maximum value

Answer: velocity resonance

1221.

Question: A transverse wave is represented by $y = A \sin(wt - kx)$, The value of wavelength for which the wave velocity is equal to the maximum particle velocity will be:

Options:

A. πA

B. $1/2 \, \pi A$

C. A

Answer: πA

1222.

Question: which of the following is not necessary for photochemical smog formation ?

Options:

A. NOx

B. hydrocarbons

C. sunlight

D. SO2

Answer: SO2

1223.

Question: which of the following nitrogen oxides would not contribute to acidification of rain water ?

Options:

A. NO

B. N2O

C. NO2

D. N2O5

Answer: N2O

1224.

Question: The molar conductivities of AgNO3, Kcl and KNO3 at inifinite dilution are: Am (AgNO3) = 133.4, $\Lambda°m$ (Kcl) = 149.9, $\Lambda°m$ (KNO3) = 144.9, The molar conductivity of Agcl at infinite dilution will be-

Options:

A. 128.4 Ω-1 cm² mol-1

B. 161.4 Ω-1 cm² mol-1

C. 138.4 Ω-1 cm² mol-1

D. 428.2 Ω-1 cm² mol-1

Answer: 138.4 Ω-1 cm² mol-1

1225.

Question: in the daniel cell, anode is:-

Options:

A. copper electrode

B. zinc electrode

C. silver-silver chloride

D. calomel electrode

Answer: zinc electrode

1226.

Question: gas which is generally used to provide an inert atmosphere in arc -welding is :-

Options:

A. helium

B. radon

C. krypton

D. argon

Answer: argon

1227.

Question: the electronic configuration of the most electronegative element is :-

Options:

A. 1S22S22P4

B. 1S2 2S22P63S23P5

C. 1S22S22P5

D. 1S22S22P6

Answer: 1S22S22P5

1228.

Question: which of the following is a transuranic element ?

Options:

A. neptunium

B. protactinium

C. actinium

D. thorium

Answer: neptunium

1229.

Question: select the element which is trace element in biological system.:-

Options:

A. C

B. ca

C. h

D. cu

Answer: cu

1230.

Question: alcoholic solution of koh is used for :-

Options:

A. dehydrogenation

B. dehalogenation

C. dehydration

D. dehydrohalogenation

Answer: dehydrohalogenation

1231.

Question: The absorption maximum for the compound in ethanol is

Options:

A. 273 $\eta\mu$

B. 268 $\eta\mu$

C. 258 $\eta\mu$

D. 278 $\eta\mu$

Answer: 278 $\eta\mu$

1232.

Question: the bathochromic shift in an absorption band occurs due to :-

Options:

A. decrease in wave length

B. increase in wavelength

C. increase in intensity

D. decrease in intensity

Answer: increase in wavelength

1233.

Question: the rate according to collision theory is given by :-

Options:

A. Rate =Ze-Ea/RT

B. Rate =ZeEa/RT2

C. Rate =ZeEa/RT

D. Rate =Ze-Ea/RT2

Answer: Rate =Ze-Ea/RT

1234.

Question: in a reaction between a and b, the rate of reaction becomes double on doubling the concentration of a and rate becomes four times on doubling the concentration of b . what is the order of reaction with respect to a and b ?

Options:

A. 0 and 1

B. 1 and 2

C. 2 and 1

D. 0 and 2

Answer: 1 and 2

1235.

Question: To Lower the freezing point of 1.0 kg water to -40°C, calculate the moles of Nacl needed (K = 1.86K kgmol-¹)

Options:

A. 10.75

B. 21.5

C. 59.5

D. 40.0

Answer: 10.75

1236.

Question: Which of the following alkyl halide undergoes faster by SN¹ reaction :-

Options:

A. CI

B. CI

C. CI

D. CI

Answer: CI

1237.

Question: which of the following is not a product of recombinant dna technology ?

Options:

A. glo-fish

B. bt-cotton

C. flavr savr

D. dolly

Answer: dolly

1238.

Question: unicellular eukaryotes are included in which kingdom of whittaker's classification ?

Options:

A. monera

B. protista

C. fungi

D. all of these

Answer: protista

1239.

Question: characteristics of the class chlorophyceae are-

Options:

A. presence of chlorophyll a, chlorophyll c and stored food starch

B. presence of chlorophyll a, chlorophyll d and 2-8 flagella

C. presence of chlorophyll a, chlorophyll b and no flagella

D. presence of chlorophyll a, chlorophyll b and 2-8 flagella

Answer: presence of chlorophyll a, chlorophyll b and 2-8 flagella

1240.

Question: consider the following statements and select the correct statements - a. dna replication is a semi-conservative process b. dna replication is a semi-discontinuous process c. dna polymerase iii is responsible for replacement of the primer sequence of the okazaki fragments d. primer is synthesized on both the strands of the dna

Options:

A. only a

B. a and c

C. a, b, and d

D. a, b, c and d

Answer: a, b, and d

1241.

Question: monocot plant having secondary growth is

Options:

A. Yucca

B. Bamboo

C. Banana

D. Cycas

Answer: Yucca

1242.

Question: pulses belong to which family ?

Options:

A. liliaceae

B. poaceae

C. leguminosae

D. brassicaceae

Answer: leguminosae

1243.

Question: the stomata are closed -

Options:

A. when ph is more than 7

B. in the presence of auxin

C. in the presence of cytokinin

D. when ph is less than 7

Answer: when ph is less than 7

1244.

Question: which of the following process does not happen during the light reaction of photosynthesis ?

Options:

A. photolysis of water

B. reduction of carbon -di-oxide

C. photophosphorylation

D. reduction of nadp

Answer: reduction of carbon -di-oxide

1245.

Question: Match the following- Column I A. C_2 cycle B. C3 cycle C. C4 cycle D. Common Respiratory Pathway E. Citric acid cycle Comumn II (i) Glycolysis (ii) Kreb's cycle (iii) Calvin's cycle (iv) Photorespiration (v) Hatch and Slack cycle

Options:

A. a(iv) b(iii) c(v) d(i) e(ii)

B. a(v) b(iv) c(ii) d(i) e(iii)

C. a(iv) b(ii) c(v) d(i) e(iii)

D. a(i) b(iii) c(v) d(iv) e(ii)

Answer: a(iv) b(iii) c(v) d(i) e(ii)

1246.

Question: seed treatment to enhance flowering in the plant is known as -

Options:

A. etiolation

B. vernalisation

C. redifferentiation

D. skotomorphogenesis

Answer: vernalisation

1247.

Question: which of the following is non-proteinaceous biocatalyst ?

Options:

A. zymogen

B. abzyme

C. ribozyme

D. apo-enzyme

Answer: ribozyme

1248.

Question: guttation takes place through -

Options:

A. lenticels

B. hydathodes

C. pneumatophores

D. phellogen

Answer: hydathodes

1249.

Question: largest male gamete is found in -

Options:

A. Pinus

B. Cedrus

C. Cycas

D. Gnetum

Answer: Cycas

1250.

Question: only wild gymnosperm found in rajasthan is -

Options:

A. Ephedra

B. Cycas

C. Pinus

D. Welwitschia

Answer: Ephedra

1251.

Question: mycoplasma differ from the other prokaryotes in -

Options:

A. presence of chitin in cell wall

B. presence of murein in cell wall

C. presence of proteins in cell wall

D. absence of cell wall

Answer: absence of cell wall

1252.

Question: lichens are the major pollution indicator of -

Options:

A. sulphur-di-oxide

B. nitrous oxide

C. suspended particulate matter

D. mercury

Answer: sulphur-di-oxide

1253.

Question: the part of a healthy plant which should be used as explants to produce haploid plant is -

Options:

A. meristem

B. pollen grain

C. root tip

D. adventitious buds

Answer: pollen grain

1254.

Question: antibodies are -

Options:

A. glycolipid

B. glycoprotein

C. carbohydrate

D. nucleic acid

Answer: glycoprotein

1255.

Question: iodine is essential for the synthesis of which hormone ?

Options:

A. adrenaline

B. insulin

C. thyroxine

D. testosterone

Answer: thyroxine

1256.

Question: "megakaryocytes" present in bone marrow produce -

Options:

A. white blood corpuscles

B. red blood corpuscles

C. platelets

D. plasma

Answer: platelets

1257.

Question: in earthworm the pair of ovaries are present in -

Options:

A. intersegmental septum of ninth and tenth segment

B. 11th and 12th segment

C. intersegmental septum of 10th and 11th segment

D. intersegmental septum of 12th and 13th segment

Answer: intersegmental septum of 12th and 13th segment

1258.

Question: during the formation of urine ' ultrafilteration ' takes place in -

Options:

A. bowman's capsule

B. proximal convulated tubule

C. distal convulated tubule

D. collecting tubule

Answer: bowman's capsule

1259.

Question: oestrus cycle is not a feature of -

Options:

A. deer

B. monkey

C. dog

D. tiger

Answer: monkey

1260.

Question: एक प्रगामी तरंग $y = A \sin(wt - kx)$ से प्रदर्शित की जाती है। तरंगदैर्घ्य का वह मान जिसके लिए तरंग वेग, अधिकतम कण वेग के बराबर होगा- (Note: This question is in Hindi, but the options are in English-like mathematical expressions. I will provide the English options as per the template, but please note the question text itself is Hindi in the PDF.)

Options:

A. πA

B. 1/2 πA

C. A

D. 2πA

Answer: 2πA

1261.

Question: for constructive interference -

Options:

A. The resultant intensity is equal to the sum of intensities of individual waves.

B. The crests of two waves or the troughs of two waves coincide.

C. The phase difference between two waves is an odd multiple of π.

D. The time interval between two waves is an even multiple of T.

Answer: The crests of two waves or the troughs of two waves coincide.

1262.

Question: If the root mean square speed of an argon gas atom at temperature T is equal to the average speed of a helium gas atom at -20 °C, then T will be :
Given:- atomic mass of Ar = 39.9 u
Atomic mass of He= 4.0 u

Options:

A. 2141.3 K

B. 2141.3 °C

C. 6729.8 K

D. 6729.8 °C

Answer: 2141.3 K

1263.

Question: For mean free path λ :

Options:

A. At constant temperature, λ increases with increasing pressure.

B. At constant pressure, λ decreases with increasing temperature.

C. λ increases on decreasing the size of molecule.

D. λ increases as the number of molecules increases.

Answer: λ increases on decreasing the size of molecule.

1264.

Question: two coherent sources of equal intensity produce maximum intensity of 144 units at a point. if the intensity of one of the source is reduced by 25%, then the intensity of light at the same point will be:

Options:

A. 108 units

B. 90 units

C. 144 units

D. 121 units

Answer: 121 units

1265.

Question: A boat at anchor is rocked by waves whose crests are 120 m apart and velocity is 20 ms-1. The boat bounces up once in every :

Options:

A. 1/6 sec

B. 3 sec

C. 6 sec

D. 1/3 sec

Answer: 6 sec

1266.

Question: as the isotopic mass of mercury decreases -

Options:

A. the critical temperature increases slightly.

B. the critical temperature decreases slightly.

C. critical temperature remains constant.

D. critical temperature decreases abruptly.

Answer: the critical temperature increases slightly.

1267.

Question: a 250 gm stone is revolved at the end of 40 cm long string at the rate of 3 revolution/sec. if after 20 sec it is making 1/2 revolution/sec then the rate of change of angular momentum will be -

Options:

A. π* 10-2

B. π* 10+2

C. $\pi/2$ * 10-2

D. $\pi/2$ * 10+2

Answer: π* 10-2

1268.

Question: In a perfectly inelastic direct collision maximum transfer of energy takes place if -

Options:

A. m_1 >> m2

B. m_1 << m2

C. m_1 = m2

D. m2 = 0

Answer: m_1 = m2

1269.

Question: among the following homonuclear molecules, the paramagnetic molecule is -

Options:

A. N2

B. F2

C. O2

D. C2

Answer: O2

1270.

Question: 10 g substance (molar mass= 50) is dissolved in 200 ml water and density of this solution was found to be 1.05 g/ml and approx. molality of the solution is -

Options:

A. 1.05 mol kg-1

B. 1.0 mol kg-^{1}

C. 0.1 mol kg-1

D. 2.0 mol kg-^{1}

Answer: 1.0 mol kg-^{1}

1271.

Question: principle quantum number (n)

Options:

A. can have the values from 0 to ∞.

B. determines the energy of the orbital to larger extent.

C. defines the three dimensional shape of the orbital.

D. gives the Spatial orientation of the orbital with respect to standard set of co-ordinate axis.

Answer: determines the energy of the orbital to larger extent.

1272.

Question: among the following substances the least viscous liquid is-

Options:

A. water

B. mercury

C. coal-tar

D. glycerol

Answer: water

1273.

Question: Critical temperature of CO_2 is -

Options:

A. 5.3 °C

B. 30.98 °C

C. 126 °C

D. 35 °C

Answer: 30.98 °C

1274.

Question: which one of the following is correct order of covalent character in the molecule :

Options:

A. $MgCl_2$ < $NaCl$ < $AlCl_3$ < $SnCl_4$

B. $SnCl_4$ < $AlCl_3$ < $MgCl_2$ < $NaCl$

C. $NaCl$ < $MgCl_2$ < $AlCl_3$ < $SnCl_4$

D. $SnCl_4$ < $AlCl_3$ < $NaCl$ < $MgCl_2$

Answer: $NaCl$ < $MgCl_2$ < $AlCl_3$ < $SnCl_4$

1275.

Question: The hybridisation state of central atom in H_2O, SF_6 and PCl_5 molecules respectively are:

Options:

A. sp^3, sp^3d^2 and sp^3d

B. sp^2, sp^3d^2 and dsp^3

C. sp^3d^2, sp^3 and sp^2

D. sp^3d, sp^3 and sp^3d^2

Answer: sp^3, sp^3d^2 and sp^3d

1276.

Question: The number of unpaired electrons in the complex ion $[Co(NH_3)_6]^{3+}$ are:-

Options:

A. zero

B. one

C. two

D. three

Answer: zero

1277.

Question: the hexadentate ligand is -

Options:

A. ethylene diaminetetraacetate

B. oxalate

C. ethane -1,2 - diamine

D. ammonia

Answer: ethylene diaminetetraacetate

1278.

Question: The correct IUPAC name of $[Cr(NH_3)_3(H_2O)_3]$ Cl_3 is :-

Options:

A. triamminetriaquachromium(iii) chloride

B. triamminetriaquachromium(ii) chloride

C. triaminotriaquochromium(iii) chloride

D. triaminotriaquochromium(ii) chloride

Answer: triamminetriaquachromium(iii) chloride

1279.

Question: atomic number of an element is 31. atomic number of elements just above it and just below it in its group are :-

Options:

A. 30,32 respectively

B. 13,49 respectively

C. 23, 49 respectively

D. 21,41 respectively

Answer: 13,49 respectively

1280.

Question: which pair of atomic number represents s-block elements:-

Options:

A. 7,19

B. 22,55

C. 12,15

D. 19,56

Answer: 19,56

1281.

Question: a solution with ph=3 is more acidic than a solution with ph=6 by a factor of :-

Options:

A. 2

B. 3

C. 1 x 103

D. 0.5

Answer: 1 x 103

1282.

Question: the endothermic process is :-

Options:

A. $F + e \rightarrow F-$

B. $cl + e \rightarrow cl-$

C. $O + e \rightarrow O-$

D. $O- + e \rightarrow O2-$

Answer: $O- + e \rightarrow O2-$

1283.

Question: The oxidation number of Fe in $[Fe(CN)6]3-$, $[Fe(CN)6]4-$, $[Fe(SCN)]2+$ and $[Fe(H2O)6]3+$ respectively would be :-

Options:

A. +3, +2, +3 and +3

B. +3, +3, +3 and +3

C. +2, +2, +2 and +2

D. +3, +2, +2 and +2

Answer: +3, +2, +3 and +3

1284.

Question: which one of the following is the ore of zinc:-

Options:

A. calamine

B. kaolinite

C. malachite

D. bauxite

Answer: calamine

1285.

Question: H3PO4 is known as:-

Options:

A. pyrophosphorous acid

B. hypophosphoric acid

C. orthophosphoric acid

D. pyrophosphoric acid

Answer: orthophosphoric acid

1286.

Question: The IUPAC Name of
CH3
H3C-CH-CH3 is

Options:

A. 1-isopropyl-3-methylcyclopentane

B. 1-methyl-3-isopropylcyclopentane

C. 4-methyl-1-isopropylcyclopentane

D. 1-methyl-4-isopropylcyclopentane

Answer: 1-isopropyl-3-methylcyclopentane

1287.

Question: which one of the following is meta directing group?

Options:

A. -NH2

B. -SO3H

C. -OCH3

D. -C2H5

Answer: -SO3H

1288.

Question: Aldehydes having at least one α- hydrogen undergoes a reaction in the presence of dilute alkali as catalyst to form β-hydroxyaldehydes. The reaction is known as :-

Options:

A. aldo condensation

B. cannizaro reaction

C. decarboxylation

D. hell-volhard zelinsky reaction

Answer: aldo condensation

1289.

Question: the basic strength of alkylamines in the aqueous state is in the order of :-

Options:

A. NH3 > C2H5NH2 > (C2H5)3N > (C2H5)2NH

B. (C2H5)2NH > (C2H5)3N > C2H5NH2 > NH3

C. (C2H5)3N > (C2H5)2NH > C2H5NH2 > NH3

D. NH3 > C2H5NH2 > (C2H5)2NH > (C2H5)3N

Answer: (C2H5)2NH > (C2H5)3N > C2H5NH2 > NH3

1290.

Question: grignard reagents add to the carbonyl group of ketones to form :-

Options:

A. methanol

B. primary alcohol

C. secondary alcohol

D. tertiary alcohol

Answer: tertiary alcohol

1291.

Question: synthetic rubber neoprene is the polymer of :-

Options:

A. isoprene

B. chloroprene

C. caprolactum

D. acrylonitrile

Answer: chloroprene

1292.

Question: bakelite is a condensation polymer of :-

Options:

A. C6H5OH and Caprolactum

B. Melamine and HCHO

C. HCHO and phthalic acid

D. C6H5OH and HCHO

Answer: C6H5OH and HCHO

1293.

Question: which of the following amino acid connot be made by human body ?

Options:

A. glycine

B. alanine

C. tryptophan

D. proline

Answer: tryptophan

1294.

Question: calcium carbide on treatment with water yields:-

Options:

A. ethene

B. ethyne

C. ethane

D. methane

Answer: ethyne

1295.

Question: Match the following list
List 1
(i)antiseptic
(ii) antacid
(iii) tranquilizer
(iv)analgesics
List 2
(a) Al(OH)3
(b)Kills microorganism
(c) morphine
(d) Chlordiazepoxide

Options:

A. (i) (ii) (iii) (iv) c b d a

B. (i) (ii) (iii) (iv) b a d c

C. (i) (ii) (iii) (iv) d c b a

D. (i) (ii) (iii) (iv) c d a b

Answer: (i) (ii) (iii) (iv) b a d c

1296.

Question: the gold numbers of some protective colloids are given. which one of these is most protective ?

Options:

A. gelatin(0.005-0.01)

B. haemoglobin(0.03-0.07)

C. potato starch(25)

D. gum arabic(0.15-0.25)

Answer: gelatin(0.005-0.01)